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Three Essays on Corporate Sustainability Language

Nahyun Kim, *The University of Western Ontario*

Supervisor: Oana Branzei, *The University of Western Ontario*
Co-Supervisor: Xin (Shane) Wang, *The University of Western Ontario*
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ABSTRACT

My dissertation explores how public firms employ language in their Corporate Social Responsibility (CSR) reports to lengthen the horizons of their strategic decisions. The three essays included in my dissertation introduce and investigate the pursuit of temporal equilibrium in the aftermath of the 2008 Financial Crisis. Specifically, I compare the emphasis placed on the short versus long- future in the annual sustainability reports of public firms and derive three explanations for the increased emphasis of long-termism.

In Essay 1 (Chapter 2), I describe how firms seek and find temporal equilibrium after the Financial Crisis. Using topic modeling, I linguistically and visually retrace the emergence of richer vocabularies by which firms describe their futures. This retrospective analysis shows how the emphasis on spatio-temporal metaphors (proximal and distal) qualified firms' financial and social responsibilities.

In Essay 2 (Chapter 3), I investigate how firms allocate attention between the short- and long-future. I introduce the concept of bifocality to underscore that public firms focus on both the short- and long-future at once. Using fsQCA analysis on changes in four topics derived and described in Essay 1 over the decade following the Financial Crisis, I reveal four different ways in which organizations linguistically create their different futures.

In Essay 3 (Chapter 4), I elaborate on the role of third parties in accelerating firms' long-termism. I focus on non-activist institutional investors who shared the fate of firms during the Financial Crisis by choosing to stay with the firms. I argue and find that these institutional investors increased long-termism whether they chose to stay (via a concentration mechanism) or leave (via a turnover mechanism) after the crisis. This essay

extends the argument of attentional control by showing how attentional interdependencies during periods of adversity enable third parties to continue to influence firms' horizons during periods of stability.

The three essays show how, in the decade following the Financial Crisis, public firms embraced spatio-temporal metaphors to qualify their activities, became bifocal by actively balancing near and far futures in their reports, and continued to match the longer-term horizons of institutional investors willing to share their fate.

Keywords: Corporate social responsibility, time, language-based view, attention-based view, topic modeling

SUMMARY FOR LAY AUDIENCE

What does it mean to balance short-term and long-term horizons? Managers of public firms are always faced with diverse stakeholders, including shareholders, employees, governments, and non-government organizations, whose demands differ, and managers are expected to meet the demands to improve firm performance. For example, shareholders request firms to increase immediate revenues while non-government organizations ask firms to take environment-friendly actions with longer durations. Although understanding and managing different time perspectives are important, it remains puzzling for managers to know how to do so. This dissertation seeks to provide one way in which managers could better attend to multiple temporalities in developing firm strategy. I first define the concept of temporal equilibrium where short-term and long-term perspectives are balanced and explore how firms conceive of different temporalities that are reflected in language. I examine this question in the context of the period after the 2008 Financial Crisis when the financial market collapsed and firms were asked to accept social accountability, which led firms to more actively deal with short- and long-term demands together. I find that firms rely on spatio-temporal language and language associated with financial and social responsibilities to construe their short- and long-term plans and goals. I then use advanced statistical techniques to investigate how firms combine different time construals to focus on both short-term and long-term durations. My findings show that there exist multiple linguistic pathways through which firms integrate time construals and engage with short-term and long-term perspectives. Moreover, I examine one particular condition—an interdependent relationship between a firm and institutional investors—that could influence the firm's management of short-

term and long-term perspectives. I specifically look at how the interdependency between a firm and institutional investors generated during the Financial Crisis may affect the firm's sensitivity to institutional investors in pursuing long-term orientation in the post-crisis period.

CO-AUTHORSHIP STATEMENT

I declare that my thesis proposal incorporates ideas of two prominent scholars who supervised my thesis and contributed as co-authors to two of the three chapters. Essays 1 is co-authored with Dr. Oana Branzei. Essay 2 is co-authored with Dr. Oana Branzei and Dr. Xin (Shane) Wang. I am the principal author of both essays. As the first author of both papers, I developed research questions, conducted the literature review, collected data, conducted empirical analysis, and prepared the first complete draft of the manuscript. Dr. Oana Branzei contributed to the theoretical and methodological development of both Essays 1 and 2, providing feedback throughout the process of idea development and refinement, data interpretation, and several manuscript revisions. Dr. Xin (Shane) Wang contributed to both Essays 1 and 2 by closely guiding the application and interpretation of topic modeling and providing suggestions on all the revisions.

Essay 3 is my own independent work and is sole-authored. I collected and merged the data, ran the analyses, and wrote all versions of the manuscript. Dr. Branzei provided feedback on the theoretical positioning, intended contribution, and deductive logic of the hypotheses. Dr. Wang guided the empirical tests of the hypotheses. Both Dr. Branzei and Dr. Wang offered suggestions on the empirical models and the interpretations of the results.

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CHAPTER 1: INTRODUCTION

1.1 Motivations for Research

Time is an important aspect of organizational strategy and decision making (Ancona et al., 2001). Many organizations traditionally maintained a strong emphasis on the short-term future by attending to immediate outcomes (Souder et al., 2016). However, in the aftermath of the 2008 Financial Crisis, a growing number of organizations realized the importance of the long-term future (Augustine et al., 2019; Bansal & DesJardine, 2014) and began to lengthen the horizons of their strategies (Ortiz-de-Mandojana & Bansal, 2016). In this thesis, I introduce the overarching concept of temporal equilibrium to explore how organizations intentionally balance the short-term and the long-term futures in their sustainability strategies.

By sustainability strategies, I mean any deliberate organizational decisions aimed at "securing intergenerational equity by meeting the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). The growing literature has emphasized temporal concepts and mechanisms specific to sustainability and cautioned that temporal equilibrium is important (Bansal et al., 2018) yet effortful and elusive (Reinecke & Ansari, 2016), noting a variety of temporal contrasts, contradictions, and paradoxes that continue to challenge business strategists (Slawinski & Bansal, 2012).

I conceptualize temporal equilibrium as a dynamic concept with iterative updates that sequentially rebalance attention between the short-term and long-term futures. Temporal equilibrium can be accomplished in parallel at multiple levels of analysis, across roles and tasks. However, in this dissertation, I focus holistically on the relative

balance between all short-term future-oriented and, respectively, all long-term future-oriented strategies firms showcase in their corporate sustainability reports. My theorizing and testing are thus based on the assumption that corporate sustainability reports capture and convey the relative emphasis on the short- and long-term futures for each reporting period of one year in each firm's sustainability strategies.

1.1.1 The Concept of Temporal Equilibrium

The overarching aim of my dissertation is to document and understand the pursuit of temporal equilibrium by sustainability-focused corporate actors in the aftermath of the Financial Crisis. By committing to sustainable goals and frequently reporting on these goals, corporate actors accept both the uncertainty of the long-term future and the difficulty of concretizing it in near-term actions (Augustine et al., 2019). They remain tethered to the short-term future by their stakeholders' expectations of quarterly reporting and benchmarking of financial performance (M. DesJardine & Bansal, 2019). For these actors, temporal equilibrium is not given but rather sought and found iteratively through choices of tasks and projects unfolding at different time scales and in different spaces (Bansal et al., 2018).

Temporal equilibrium has a long history in the management literature. Historically there have been two opposite camps of thoughts on temporal equilibrium. One camp, grounded in normative economics, has viewed temporal equilibrium through a trade-off lens whereby firms make intertemporal trade-offs that over time consistently favor the short over the long term (Laverty, 1996). Present cash flows are generally preferred to expected but delayed ones; the future is discounted proportionally to the length of the time horizons required to attain them. The longer-term future outcomes

become more devalued as time horizons increase, in large part, because the estimation of returns itself becomes harder to accurately predict. Although such intertemporal trade-offs, taken for granted in the strategy literature, have become much more nuanced in the sustainability literature, early studies noted that temporal tensions grew larger as the urgency and the uncertainty of the grand challenges firms faced increased (Slawinski & Bansal, 2012, 2017; Van der Byl & Slawinski, 2015).

This first camp is anchored in the dual assumption that time is linear and absolute. Time flows directionally at a constant speed from the past to the future. Past and future also remain distinct and mutually exclusive. Because time unfolds uniformly, comparisons between short- and long-term futures are directly proportional with the length of the time horizon and systematically favor the short over the long term. The temporal equilibrium is stable but myopic because intertemporal trade-offs systematically refocus and reward attention to near events and favor tasks with immediate and certain outcomes. Intertemporal tensions are at the root of systemic short-termism. They have also made *the business case* particularly challenging given the much higher uncertainty associated with disproportionately longer time horizons that characterize sustainability issues (Bansal et al., 2018). Because the temporal equilibrium privileges short-term futures, Augustine and colleagues (2019) explain how actors concretize temporally distant outcomes in order to converge on proximate actions and outcomes. Intertemporal tradeoffs do not preclude temporal equilibrium. Slawinski and Bansal (2015) reveal that firms can reconcile the short-term and long-term horizons by adopting qualitative (i.e., scenario planning) and quantitative (i.e., economic planning) tools to project a firm's

future. Firms can also proactively counterbalance intertemporal tradeoffs through cross-sector collaborations and pre-competitive alliances (Bowen et al., 2018).

The second camp builds upon behavioral theory to recognize time as inherently subjective, supporting different preferences and affording different occasions for temporal structuring (Orlikowski & Yates, 2002), temporal settlements (Kaplan & Orlikowski, 2013), ambitemporality (Reinecke & Ansari, 2016), and temporal translation (Hernes & Schultz, 2020). This second camp does not horse-race short- and long-futures but rather explores their complementarities. It celebrates the multiplicity and idiosyncrasy of times: the points, paces, and durations that coexist and combine. Because this second camp recognizes the plurality and fluidity of cycles for different actors, it opens new windows into sustainability organizing by exploring the configurations of temporalities. For this second camp, temporal equilibrium is configural, and attention shifts to how actors combine different temporal scales. When time is subjective, intertemporal trade-offs become irrelevant. Kim and her colleagues (2018) showed how tea producers in rural East Africa do not make an intertemporal choice. Instead, they envision the present and the future as interconnected, viewing their near future as an extension of the present, rather than a separate time window.

Although the second camp suggests temporal equilibrium can be found, it treats it as fleeting. Balancing different temporalities is difficult to obtain and hard to sustain. Each of these temporalities are subject to (re)interpretations, and the (re)interpreted outcomes can be regrouped to create new temporal structures (Shipp & Richardson, 2021). Kaplan and Orlikowski (2013) induced the precarious equilibrium notion of temporal settlements, achieved through reinterpreting the past, present, and future in a

quest to develop coherent strategic accounts. Kaplan and Orlikowski's temporal settlements are provisional; they are updated when changes in an external environment trigger new breakdowns. Similarly, Reinecke and Ansari (2016) emphasized that temporal collision and brokerages rely on a process of continuous adjustment whereby parties with oppositional temporalities struggle to resolve temporal conflicts arising from their discrepant understandings about time.

1.1.2 Temporal Equilibrium and the 2008 Financial Crisis

The two studies—Kaplan and Orlikowski (2013) and Reinecke and Ansari (2016)—suggest that precarious and provisional temporal equilibria are particularly relevant when multiple temporalities have to be reinterpreted and readjusted. This is clearly the case in the aftermath of critical events that radically disrupt economic and institutional systems. Critical events, such as an economic crisis, cause unexpected changes in the present and future, driving individual and collective actors to grapple with inconsistencies within and among their own internal temporal structures (Tang et al., 2020).

My dissertation explores linguistic representations of time by organizations following the 2008 Financial Crisis. The resulting financial downturn was regarded as the most severe economic crisis since the Great Depression of the 1930s (Brunnermeier, 2009). It resulted in catastrophic economic and financial collapse as well as serious setbacks in social progress. While attempting to recover from significant losses, organizations faced overt criticism about their short-term temporal schemas (Shipp & Richardson, 2021), which were repeatedly blamed for the myopic and greedy decisions that culminated in the collapse. Many organizations publicly acknowledged the

downsides of focusing solely on the short-term. However, abandoning their embedded short-term schemas required radical reinterpretations and unprecedented adjustments. At the time of the Financial Crisis, few organizations accepted long-termism as a valid alternative. However, several years later, shifts from the short to the long term became normalized among industry leaders, such as Goldman Sachs. Consulting reports promoted the benefits of deliberately straddling, even shifting, to long-term temporal schemas and structures (Barton, Manyika, Koller, et al., 2017). Studies conducted a decade after the Financial Crisis provided evidence that organizations that shifted towards long-term outlooks consistently outperformed their peers in average revenue, earnings, and market capitalization (Barton, Manyika, & Williamson, 2017). Research further showed that organizations that had adopted a long-term orientation before the Financial Crisis suffered lesser losses during the Crisis and recovered more quickly from the losses they suffered (DesJardine et al., 2019). Taken together, these studies revealed and encouraged the emergence of long-term schemas and structures by pointing out the accrual of differential performance over the decade following the Financial Crisis.

1.1.3 Renewal of Temporal Equilibrium through the Lens of Attention-Based View

In my dissertation, I explore how organizations shifted from short-termism towards long-termism. Specifically, I follow changes in their subjective views of time (Shipp & Jansen, 2021) over objective (clock) time. My working premise, building on Kaplan and Orlikowski's (2013) notion of provisional temporal settlements and Reinecke and Ansari's (2016) notion of temporal brokerage, is that organizations successively balanced short- and long-term futures as they "worked" (reinterpreted and readjusted) their own horizons. Prior quantitative studies range in the granularity of time from

quarterly (DesJardine & Bansal, 2019) to annual reporting periods, with qualitative studies revealing significant variation in the frequency of temporal work and the distribution of resulting updates within these windows. I examine temporal equilibria at annual intervals because this ensures their visibility among stakeholders, affording tracking of trends for each organization and comparability among organizations over time.

Although researchers of time distinguish between temporal constructs and actors' temporal orientations (Tang et al., 2020), my premise is that organizations pay deliberate attention to time. I therefore take an attention-based view (ABV) to theorize and test mechanisms by which firms reorient their attention from short to long futures. While ABV captures only a subset of the various changes in temporal schemas and structures (Shipp & Jansen, 2021), my premise is that changes in annually-reported patterns of attending to short versus long futures offers a good proxy for transitions among temporal equilibria (Andrews, 1971; Ocasio, 1997; Ocasio et al., 2018, p. 156).

One core tenet of ABV is that communication captures and changes a firm's strategy. ABV scholars have examined the importance of communication in explaining dynamics of organizational attention. In their work, Ocasio and his colleagues (2018) emphasize diverse aspects of communication and call for more research on how the content and practices of communication inform patterns of change in organizational attention.

My dissertation approaches communication through a language-based view by examining how firms use language to reflect their temporal work in their annual reports. Although firms may achieve new temporal equilibria throughout the year, they

communicate it at regular intervals when they hold the attention of their stakeholders. By analyzing annual reports within and between organizations and using communication as a proxy for their attention to the short versus long future, I can chart and compare their temporal equilibria over time. Revealing the patterns of transition from the short-termism prevalent before the Financial Crisis to the long-termism expected of leading corporate actors today (Barton, Manyika, & Williamson, 2017) contributes to the literature on temporal equilibria by showing how cohorts of organizations shifted their attention from proximal to distal horizons (Augustine et al., 2019).

Some studies have highlighted the importance of the agentic role of language, more broadly communications (Ashcraft et al., 2009; Cornelissen et al., 2015; Ocasio et al., 2018). This perspective claims that language is a form of social action where a speaker and listener constantly interact in communication. Studies in this research stream have emphasized the agency of language in constituting, maintaining, and transforming institutions as collective cognitive understandings; however, conversations have stopped at theoretical discussion. My research extends these theoretical discussions by providing empirical evidence that language performs in organizational attentional engagement when firms navigate temporal equilibrium, which partially answers the call by Ocasio et al. (2018).

1.2 Thesis Structure

In my first essay, I explore how firms combine the short-term and the long-term horizons in the post-crisis period. While previous literature has recognized the importance and benefits of the long-term horizon (Bansal & DesJardine, 2014; Ortiz-de-Mandojana & Bansal, 2016), most of the studies have primarily focused on different

attributes of each temporal horizon and emphasized the trade-off between the short-term and the long-term horizons. The two horizons can co-exist, and firms have their own ways of combining multiple temporal horizons, coping with external challenges. After the Crisis, multiple temporalities shifted at the same time, and yet, how firms struggled to overcome the shortcomings of the short-termism and combine temporal horizons remain underexplored.

To analyze how temporal horizons are combined and multiple temporalities are shifted, I take an exploratory approach by using the probabilistic topic modeling. I apply topic modeling to 796 sustainability reports issued by 100 public firms in the U.S. from 2009 to 2017 to identify patterns of change. Specifically, I look at firms' language that reflects organizational temporal horizons and how combinations of future-oriented words in CSR reporting perform through spatial qualifications. I then conduct visual analysis to elucidate how firms linguistically stretch their temporal horizons from the short-term to the long-term and attend to both horizons over time.

This exploratory essay complements previous literature on dynamics of temporality. Although firms could embrace multiple temporalities, the foci of extant studies have been on the switch between the temporalities, with a few exceptions. This essay presents the co-existence of multiple temporalities that is manifested in language and elucidates patterns by which words of temporalities are deconstructed and reconstructed over time in the aftermath of the Financial Crisis. I suggest that a linguistic truce between temporalities is made and constantly negotiated.

In my second essay, I investigate how firms linguistically configure the short-term and the long-term future horizons and reconstruct the future in their CSR reporting. An

increasing number of firms have sought to incorporate the long-term horizons into their temporal structure since the Financial Crisis, and yet, only a handful of studies discuss configurations of the future temporalities (Hernes et al., 2020; Kim et al., 2019). These studies, however, emphasize conditions such as extreme resource constraints or product innovation and stop short of explaining heterogeneous configurations of temporalities that firms have under similar uncertainty and ambiguity.

I first adopt LDA topic modeling on 691 sustainability reports of 86 publicly-traded firms in the U.S. and Canada for the post-crisis period, from 2009 to 2017. LDA topic modeling allows me to extract firm-level cognitive construals in CSR reporting. Of the construals, I choose four cognitive construals of time and employ fsQCA to identify different combinations of time construals. By adopting fsQCA, I was able to discover distinct configurations that firms take to combine the short-term and the long-term horizons. Lastly, I conduct an in-depth qualitative analysis on original documents of several firms, documents where each configuration is clearly presented. I review how time construals are jointly used and interpret characteristics of each configuration that leads to temporal equilibrium after the Financial Crisis of 2008.

The second essay provides a configurational approach looking at how firms generate their own recipes of balancing the short-term and the long-term horizons in future construction. It suggests that there exist multiple pathways through which firms linguistically search for temporal equilibrium. Firms' experiences of moving towards temporal equilibrium are cumulative, and repeated interactions about temporalities go beyond language while bringing about continuous organizational attentional engagement.

In my third and last essay, I examine one contingency that impacts firms' temporal configurations. Specifically, I focus on whether and how the solidarity with institutional investors during the Crisis shaped firms' sensitivities to the investors' behaviors in having long-term orientation after the crisis. In the previous literature, many scholars studied the effect of activism by investors, either in positive or in negative ways (M. R. DesJardine & Durand, 2020; Flammer et al., 2021), on corporate long-term strategy. However, the role of one special interest group--institutional investors-- which has a significant state of a firm's capital structure and shares a fate with the firm has been neglected. I argue that institutional investors' decisions to stay or leave during and after the Crisis is critical to a firm's search of temporal equilibrium for its survival.

I use several firm-level datasets and construct a unique longitudinal panel dataset to deductively test my theory. I conduct content analysis using the LIWC dictionary on 209 sustainability reports of 48 U.S. firms between 2010 and 2016. I take a subsample analysis from (a) a group with a high level of solidarity between institutional investors and a firm, and (b) a group with a low level of solidarity between institutional investors and a firm, after calculating the level of solidarity of institutional investors and a focal firm from 2007 to 2008 and 2009. I analyze how firms in each group are more attentive to institutional investors staying and leaving, respectively, after 2010.

This essay explains a condition under which temporal equilibrium is reset by an influential third party, institutional investors who decided to stay with a firm during the Crisis. Throughout hard times, firms become hyper-vigilant about strong cues in a catastrophic situation and create an interdependent structure of attentional control with stakeholders who can help the firm's control over the situation.

1.3 Contributions to Management Literature

Overall, the three essays in my dissertation contribute to ABV of a firm through language. These essays seek to elucidate three aspects of temporal equilibrium for which firms search in a post-crisis era. The first essay highlights sufficiency conditions of pre-crisis temporal equilibrium. The epic disruption caused by the Financial Crisis exposed that focus on one temporal horizon, especially the short-term horizon, is no longer sufficient to address complex stakeholder demands. Firms not only have multiple temporal horizons but also actively deconstruct and reconstruct their short-term and long-term horizons, navigating temporal equilibrium. The second essay emphasizes instability of the navigating process towards temporal equilibrium. Although previous literature documents settlements of temporalities and accompanied fluctuations, these studies stop short of fundamental instability inherent in the settlements. Search for temporal equilibrium is a sequential process that is not stable but a constant updating of temporal balance. The third essay illuminates one contingency condition--interdependency--that influences navigating temporal equilibrium. My research specifically looks at when interdependency between a focal firm and institutional investors is formed and how it is effective at organizational search for temporal equilibrium.

My dissertation establishes that firms have multiple temporal horizons and suggests that firms do not have one short-term or one long-term horizon but possess multiple mixes of horizons that firms constantly update. With three essays, I aim to elucidate how horizons are combined and how firms engage with the combination, which is evidently manifested in language.

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CHAPTER 2: NAVIGATING TEMPORAL EQUILIBRIUM: HOW FIRMS COMBINE MULTIPLE TEMPORALITIES

2.1 Abstract

Researchers have long problematized the significant costs of short-termism and recently emphasized the benefits of long-termism. While acknowledging that the multiplicity of temporalities becomes important, previous studies have mostly looked at one major shift from one temporality to the other. This paper seeks to address this oversight by highlighting the role of language in constantly balancing multiple temporalities. I take an explorative approach using machine learning technique to analyze 796 sustainability reports of 100 firms in North America after the 2008 Financial Crisis that caused significant shifts from short to long-term orientation. The results suggest that firms use four linguistic categories (responsibility, chronotopes, reporting, and sectoral language) to describe their sustainability actions. Specifically, firms rely on chronotopes to contract and stretch out the timelines featured in their sustainability reports. My findings highlight the subtle role of linguistic representation in balancing multiple temporalities.

Keywords: Temporal equilibrium, multiple temporalities, sustainability, topic modeling.

2.2 Introduction

Short-termism refers to "decisions and outcomes that pursue a course of action that is best for the short term but suboptimal over the long run" (Laverty, 1996, p. 826). Short-termism is typically understood to short-change investment in long-term projects, such as corporate sustainability or research and development, and therefore, is believed to jeopardize a firm's viability and resilience (Bansal & DesJardine, 2014). In contrast, scholars and practitioners acclaim the benefits in adopting a long-term orientation and its positive consequences on corporate sustainability (Ortiz-de-Mandojana & Bansal, 2016). Since the Financial Crisis in 2008 publicly contested short-termism and exposed its detrimental effects on society, the importance of long-term orientation has been increasingly acknowledged, and several consultancies began recommending long-termism and proclaiming its beneficial effects on traditional metrics of financial performance (Barton, 2011; Barton et al., 2017). Based on the evidence available, the turn from short- to long-termism took place several years after the Crisis, in 2013-14, with most leaders credited for the shift publicly attributing their impetus for shifting their orientation to the societal backlash and social cost of the crisis.

This essay grapples with the longitudinal nature of the transition from short- to long-term future. I focus on firms that had already committed to corporate sustainability by frequently reporting on their long-term initiatives because they are more likely to move more quickly and transparently towards long-termism.

The new long-term perspective appeared incompatible with the short-term perspective that had historically dominated most industries. In this essay, I seek to answer the research question, *how do firms transition from the short- to the long- future in the*

aftermath of the Financial Crisis? Specifically, I take an exploratory approach by examining changes in firms' language. Because I focus on firms who previously reported and continue to report regularly on long-term issues, I can isolate changes in temporal language as they happen from one year to the next.

By using a machine-learning based text analysis technique, I analyze 796 sustainability reports issued by 100 firms headquartered in North America from 2009 to 2017. Sustainability reports invite and include multiple temporalities because firms showcase a variety of projects with different stakeholders and typically specify the timelines associated with these projects. Therefore, analysis on what firms publicly declare in corporate social responsibility (CSR) reports enables me to observe linguistic oscillations in the public presentation of temporalities and changing patterns over time. I adopt topic modeling to extract latent information (Hannigan et al., 2019; Kaplan & Vakili, 2015) and patterns of firm-level employment of temporal language over time. Topic modeling discovers groups of word assemblages (topics) across a large archive of documents using unsupervised machine learning algorithms (Blei, 2012; Blei et al., 2003). Each topic is regarded as a constitutive unit and units are treated as orthogonal. Extracted topics require interpretation. Following the extraction of topics, I iterate between the literature and the linguistic content of each topic to infer the meaning of each topic on its own and the different content areas represented by one topic relative to the others. In addition to multiple discussions with my supervisory committee, both myself and my co-author engaged in deeper analysis for a smaller subsample of ten selected firms and prepared detailed vignettes of my qualitative analysis to more intuitively describe how each topic appears in these reports over time. In addition, I conduct content

analysis to explore two working hypotheses about how firms may deliberately calibrate short- and long-future in their corporate sustainability reports: (1) elasticity: how firms stretch or contract their temporal orientations and (2) bifocality: how firms pay attention to multiple temporalities simultaneously.

My topic modeling analysis reveals firms' spatio-temporal emphases, with two dominant chronotopes evident for all firm-years. In addition to these two chronotopes, topics reflect the priority firms place on reporting (one topic) and their affinity to sector-prototypical language (seven topics). Both reporting topic and sector-specific topics are relatively stable over firm-years, whereas chronotopes fluctuate significantly for each firm over time. Topics also juxtapose firms' responsibilities to shareholders (which I labelled financial) versus the other stakeholders (which I labelled social). These differ from the emphasis on reporting itself. Financial and social responsibilities also vary over time.

The exploratory analyses show that all firms contracted their temporal orientations, privileging the short-term future more in the immediate aftermath of the Crisis than before, but then quickly increased attention to long-term future. The same pattern is reflected by the two topics that capture proximal chronotopes, which describe the here-and-now of firms' short-term projects, versus distal chronotopes, which describe the there-and-then of firms' long-term projects.

I refine this exploration by taking a closer look at financial and non-financial firms to examine the working hypothesis that financial firms may emphasize the short-term more than non-financial firms given their greater sensitivity to shareholders. My analysis shows that financial firms contract and stretch their temporality more than non-

financial firms. They also focused relatively more on distal chronotopes over proximal chronotopes along the entire study period. Although non-financial firms stretch and contract temporalities to a lesser extent than financial firms, their language reflects more frequent calibration. Relative to financial firms, non-financial firms use more proximal chronotopes than distal chronotopes. Although these exploratory analyses reveal patterns of association and remain silent on causality, they bring forward novel observations that help guide the research agenda on temporality and corporate sustainability. The findings suggest that firms perceive multiple temporalities using chronotopes and firms under great short-term pressure pay more attention to the future distant from the present.

This study contributes to the literature on time in organization studies by showing firms' transitions among oppositional (Reinecke & Ansari, 2016) or paradoxical temporalities (Slawinski & Bansal, 2017). My exploratory study suggests that firms iteratively reallocate attention towards the short- and long-future and unpacks linguistic components that capture changes in this reallocation of attention over time. By following changes in language with topic modeling and content analysis, this exploration emphasizes the diagnostic relevance of spatio-temporal emphasis (chronotopes) in the public disclosure of their corporate sustainability efforts. Linguistic description also suggests that firms oscillate among short- and long-futures as they experiment with different combinations of chronotopes (proximal/distal) and responsibility (financial/social).

2.3 Literature Review

2.3.1 Multiple Temporalities and Short-termism

Prior studies have examined how firms perceive multiple temporalities in different domains, such as intertemporal trade-offs (Laverty, 1996), ambitemporality (Reinecke & Ansari, 2016), temporal juxtaposition (Slawinski & Bansal, 2015), temporal translation (Hernes & Schultz, 2020) and temporal connections from the present (Kim et al., 2019). The literature on time shares the premise that individuals, or organizations, acknowledge the existence of different time horizons (e.g., short-term horizon and long-term horizon) of firm activities, yet the majority of conversations about time lie at intertemporal trade-offs and subsequent preference on short-term (Laverty, 1996). The notion of intertemporal trade-offs is so compelling that firms' preferences for immediate, sub-optimal outcomes has been historically justified and widely accepted. It is not uncommon that when firms confront risks or are under pressures from shareholders, firms find comfort in short-term outcomes, even at the expense of long-term outcomes.

Although the dominant discussion over intertemporal trade-offs and corporate short-termism has largely precluded a deeper understanding and ownership of multiple temporalities by firms until now, several recent studies emphasize the significance of firms acknowledging the impact of their temporal preferences on various outcomes. For example, Slawinski and Bansal (2015) present cases on how firms juxtapose time (short-term and long-term conditions) by considering multidimensional data, engaging with diverse stakeholders with different temporal foci, and collaborating with peer firms and firms in other sectors in their quest for broader, holistic solutions for grand challenges such as climate change. Similarly, Reinecke and Ansari (2016) revealed organizational efforts leading up to the mutual acceptance and precarious co-existence of different types of time (objective and subjective time), emphasizing the difficulties encountered in

negotiating oppositional and largely incompatible temporal structures. Hernes et al. (2020) further suggest that firms can synthesize distinct temporalities by skillfully sampling and combining elements of their distant past with their envisioned future. Kim and her team (2019) elucidate how the present can be stretched into the near future and suggest lesser differentiation and/or greater blending of different horizons, especially when organizations experience resource constraints or future uncertainty.

Much of the work at the intersection of time and corporate sustainability, however, has focused on a few cases where a handful of firms already recognize and attend to multiple temporalities, either in stable circumstances (Reinecke & Ansari, 2016) or in developing preemptive strategies (Slawinski & Bansal, 2015). I also focus on firms that already recognize multiple temporalities because they had already reported on projects of different time spans. I seek to capture shifts in how these firms attend to different horizons over time.

2.3.2 Organizational Attention to Time and Language

Several researchers have noted the importance of language in understanding time based on an attention-based view. Language reflects what firms (e.g., top managers or an organization as a collective) pay attention to (Cho & Hambrick, 2006; Ketokivi & Castaner, 2004). For instance, Nadkarni and Chen (2014) suggest that a firm's new product introduction is contingent on CEO temporal focus using word-count analysis grounded in the reflective approach. Similarly, DesJardine and Bansal (2019) measure organizational time horizons by developing a dictionary of short-term and long-term words and calculating a time horizon ratio (the number of long time horizon words divided by the sum of the number of short time horizon words and the number of long

time horizon words). Alternatively, studies have looked at narratives or discourses that exhibit individual or collective perceptions on time.

Conventionally, much of the previous research adopts content analysis methods to examine time perspectives (Krippendorff, 2004; Weber, 1990). The essential idea of content analysis is that certain words belong to an upper-level category and the usage of the words represent values and meanings of the category. A dictionary development and word count analysis are content analysis methods, and both have been widely adopted. Such analytical approaches for textual data have gleaned insights; however, there remain limitations. The dictionary development in content analysis requires many subjective interpretations, and as such, the relationship between words and a category may not be valid or replicated. Word count analysis captures the importance of words and specific ideas linked with the words but the sole reliance on counting of words may result in the loss of valuable and important information in the context.

Complementing extant studies, this essay unveils a more granular component of attention to time as it presents in firm's public language. I reveal how organizational allocation of attention among time horizons changes subtly and slowly, yet these small changes accumulate over time. Albeit granular, components of firm language loom particularly important in understanding how firms negotiate multiple temporalities. The patterns revealed in this first essay are subject to several limitations. Each organization has its own culture and lingua franca, and thus, words need to be interpreted more carefully in consideration of the contexts. Cognitive shifts due to changing some words may not be equally influential for all firms, even those in the same sector. Even firms that

confront similar issues may take distinct actions to address them; in this case the meaning of an identical word may no longer be the same.

Attentional consequences of granular components of language have precedent in the literature. For example, Crilly (2017) highlights the role of temporal frames (time-moving frames and ego-moving frames) and presents that interconnected mappings between time and space are concerned with firm managers' handling multiple temporalities between the short-term and long-term. Similarly, Augustine and her colleagues (2019) underline the relationship between linguistic construals and temporal distance, showing that near future relates to words with concrete, practical values whereas distant future is associated with words containing ideal imaginaries as well as desirable consequences.

2.4 Data

I used firms' annual CSR or sustainability reports produced after the Financial Crisis from 2009 to 2017 for the analysis. I collected each firm's CSR reports from the Global Reporting Initiative (GRI) Sustainability Disclosure Database where information about corporate social, environmental reporting is documented. In collaboration with Data Partners, GRI has compiled firms' sustainability reports that generally provide the firms' CSR engagement in the past and the present along with future goals and plans. For example, in its sustainability report in 2013, Morgan Stanley shared the firm's overall sustainability strategy and approaches to yield social, environmental, and financial benefits through its engagement with environmental finance (e.g., financing clean technology), public finance (e.g., improving health care infrastructure), and social finance (e.g., helping neglected communities to better access financial services). The firm not

only delineated its partnerships and investment programs, such as Accion East's Loan Guaranty program since 2010, but also its plans to broaden the programs in the future. Most but not all firms also include information on whether they met GRI disclosure standards for the year of reporting. Time-sensitive information in sustainability reports presents how firms account for multiple temporalities concerning their moral stance.

I constructed my sample using publicly traded firms headquartered in the U.S. and Canada in various sectors including agriculture, aviation, automotive, chemicals, energy, finance, healthcare, and mining. With this coverage, I sampled firms taking both upstream (i.e., chemicals and mining) and downstream (i.e., energy and healthcare) activities, which enhances the generalizability of my outcomes. I collected the reports from the GRI database; if a report was not posted in the GRI database, I searched the firm's website and, if available, downloaded the report. To ensure linguistic consistency, reports written in French or Spanish were excluded. My full sample consists of 339 firms, and the number of sustainability reports is 1,581. I then narrowed down the full sample to identify the firms that published sustainability reports in more than seven years for the post-crisis period, from 2009 to 2017. By concentrating on frequent reports, I was able to uncover more granular information about firm-level attention on temporal multiplicity and to obtain stronger consistency in reporting. The sample of frequent reporters includes 100 firms, and the number of sustainability reports is 796. I compared results from the full sample to the sample of frequent reporters and confirmed that the two results are significantly similar. The structure of my final sample by year and by sector is summarized in Table 1.

TABLE 1
The Structure of The Final Sample

	2009	2010	2011	2012	2013	2014	2015	2016	2017	The total number of reports
Automotive	3	2	4	4	4	4	4	4	2	31
Aviation	4	3	5	5	5	5	5	5	4	41
Chemicals	8	13	12	13	13	13	13	11	5	101
Mining	10	12	16	16	15	16	16	16	14	131
Energy	8	12	13	13	14	13	14	12	11	110
Healthcare	6	7	9	9	9	9	9	9	7	74
Metal products	3	4	4	4	4	4	4	4	1	32
Financial services	17	26	35	32	35	34	35	33	29	276
Total	59	79	98	96	99	98	100	94	73	796

2.5 Analysis and Results

2.5.1 *Topic Modeling*

To analyze how firms conceive of multiple temporalities in their CSR reporting, I employed a probabilistic topic modeling, a Latent Dirichlet Allocation (LDA) approach (Blei, 2012). The probabilistic topic modeling allowed me to discover the latent structure of CSR reports. By applying the LDA approach, in this paper, I sought to identify two key aspects of the latent structure embedded in CSR reports. First, I looked for and extracted a set of topics that compose each document. Topics consist of a group of words that are used together to interpret a cognitive object reflected in language practices. Second, each document is deemed a combination of the topics. CSR reports, for instance, contain various information in relation to types of a firm's CSR investment, recognition by third parties, and social and environmental performance. With the LDA approach, I could also extract and then compare the probabilities that each topic is likely to be assigned for every document.

The probabilistic topic model in this paper adopts the Dirichlet distribution to calculate probabilities that each topic is likely to be assigned to each document and that words in each topic are likely to be used to construct a firm's CSR report in the post-crisis period. The LDA approach presumes that each document is randomly generated based on the hidden structure (i.e., topics or terms in each topic). A well-designed model should extract the hidden structure that could regenerate documents substantially similar to the original document.

To conduct topic modeling, I first employed the cleaning process, by which I could lower the complexity of the documents while maintaining the essential contents of the data. I removed stop words, such as pronouns, articles, and prepositions, and non-alphabetical expressions, including numbers and punctuation. I then applied the stemming process to minimize diverse forms of words conveying the same semantic content.

After the cleaning process, I ran the LDA topic modeling on CSR reports to uncover topics. The number of topics can be determined by two rules of fit: accuracy and validity (Hannigan et al., 2019). The logic of accuracy focuses on metrics such as perplexity to identify the optimum number of topics that construct documents. By contrast, the logic of validity emphasizes semantic differences of the same word in distinct contexts (internal validity). It also highlights where a topic is closely associated with an external condition (external validity) and when a particular event happens, the topic becomes more significant. While the validity provides semantically meaningful topics, it tends to be subjective, and it makes interpretation of the topics more difficult. The accuracy rule, while semantically less meaningful, is more objective. Combining

both rules, I first followed the accuracy fit to narrow down a particular range of the number of topics and then examined word-groups in each topic for multiple numbers of topics. I then decided which number of topics was the most representative of the documents.

To determine the range of the number of topics, I relied on perplexity metrics. I first divided the data into two subsets: (1) the subset to develop a training model that can uncover the latent structure of the documents and (2) the subset used to test how effectively the training model could regenerate the document. Simply put, the perplexity analysis estimates the accuracy of the extracted latent structure. The lower the perplexity score is, the better the model predicts the sample. I chose the ranges of the number of topics from 5 to 10, 15, 25, and 35 and found that the range between 5 and 15 had the lowest perplexity score. Then, I restricted the range from 5 to 8, 10, 12, and 15. The perplexity scores were so similar at this point that I manually determined how a group of words was jointly used and chose the model with 12 topics that had strong internal validity.

Finally, I labeled topics based on the group of words associated with each topic. For example, one group of words included operate, safety, oil, gas, develop, program, energy, employee, water, manage, work, and community; this group, I interpreted as issues related to the oil and gas industry and labeled the topic Oil & Gas. I interpreted each group of words in this manner, and where inconsistencies existed between interpretations, I consulted my advisor to help determine which label was a better fit. I returned to the original document to investigate how the group of words had been used in

a particular context. I iterated this process until both I and my advisor reached full agreement on the meaning of each topic, then, defined and labelled the topic accordingly.

2.5.2 Topic Modeling Findings

I found four distinct types of topics: responsibility (financial versus social), chronotopes (proximal versus distant spatio-temporal language), reporting, and sectoral language.

Financial responsibility is concerned with corporate responsibilities for shareholders and firms' disclosures about financial outcomes. Social responsibility is associated with corporate responsibilities for broad set of diverse stakeholders. It shows firms' attention to sustainability engagement with both internal and external stakeholders. The two responsibility topics reflect firm-level priority on disclosure and include various activities by which the firm is accountable to multiple stakeholders involved in firm operations. Because firms attending to CSR tend to manage tensions of integrating financial and social responsibilities, having two topics—financial and social—is consistent with the previous literature.

Chronotopes, originated from linguistics literature, refer to a cognitive notion that time and space are intertwined (Bakhtin, 1981; Morson, 1994). I labelled these two topics as chronotopes because each has both a temporal and a spatial dimension. Referring to them as chronotopes emphasizes that firms interpret projects using both temporal and spatial dimensions and these dimensions work jointly to convey a particular point of view and duration in time and space at once. For example, if a firm sets a goal of net-zero carbon emission by 2040, specifications of years or months and reification of within-firm business units or geographic operations are taken into account together. The proximal

chronotope is associated with geographically close, short-term oriented activities while the distal chronotope indicates geographically far, long-term oriented activities.

Greater emphasis on reporting, per se, potentially reduces information asymmetry. The seven remaining topics capture sector-prototypical language. Sectoral language exhibits sector-specific issues, such as a vehicle in the automotive sector or air in the airline sector. Firms within the same sector showed remarkable similarity in the word combinations they used. The persistent centrality of objects continued to orient organizational attention around each sector's primary set of activities, with almost indistinguishable word clusters in use by the vast majority of incumbents. Reporting and sectoral language show significant stability over time, unlike chronotopes and responsibility topics.

Responsibility. The responsibility category has two topics; financial and social. The financial responsibility contains top words related to numbers ("financial", "million", "asset", and "income"). The social responsibility topic captures stakeholder-related terms ("community", "employee", "help", and "support"). After the Financial Crisis, the importance of corporate social responsibilities skyrocketed, and firms had to adjust ways of managing financial and social responsibilities. Because financial responsibilities are tied to short-term focused actions while social responsibilities are aligned with long-term focused actions, firms strived to manage both responsibilities with different levels of focus in their actions. No longer was the choice between the short-term and the long-term; instead, firms began to address multiple temporalities simultaneously by splitting their attention. Rather than prioritizing either value, firms sought to conjointly manage financial and social responsibilities.

Chronotopes. Two topics are categorized as chronotopes and labeled as proximal chronotope and distal chronotope. I found that the chronotopes in CSR reporting have not only geographic attributes but also social material characteristics. The proximal chronotope encompasses words related to primary stakeholders and short-term oriented activities (“product”, “goal”, “customer”, “employee”, and “year”). By contrast, the distal topic captures activities that cover long-term oriented issues (“ESG”, “CSR”, “project”, “environment”, and “invest”). Words that compose the distal chronotope imply innovative approaches that a firm could take in redefining its policy.

Reporting. The reporting topic includes keywords about firm engagement (“report”, “manage”, “response”, and “perform”).

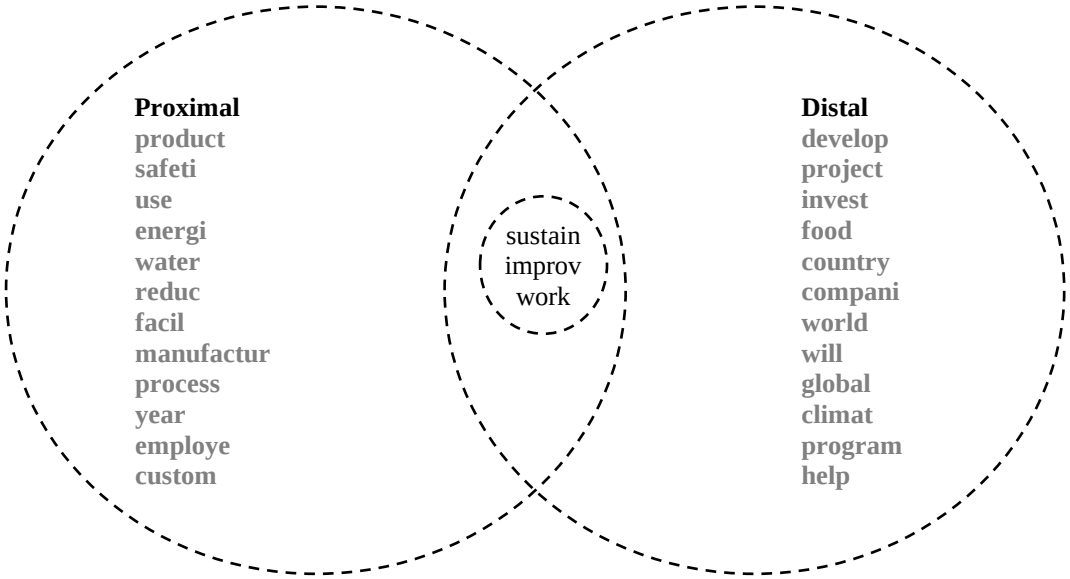
Sectoral Language. The remaining seven topics are concerned with the object of primary business activities and related social, environmental issues in each sector (i.e., mine, vehicle, airplane), which were typically the most frequently used words. The topic health sector contains words related to healthcare (“health”, “patient”, “care”, and “help”). The topic energy sector appears in relation to energy operations and development (“operate”, “water”, “emission”, and “energy”). The topic mining sector consists of a list of words associated with mining activities and related issues (“mine”, “community”, “water”, and “site”). The topic oil and gas sector includes words about oil and gas extraction (“operate”, “gas”, “company”, and “oil”). The topic automobile sector encompasses words concerned with cars and fuel emissions (“vehicle”, “emission”, “fuel”, and “environment”). The topic aviation sector contains words pertaining to airlines and customer service (“customer”, “air”, “airport”, and “service”). The topic

finance sector concerns banking activities and region-specific terms (“bank”, “financial”, “client”, and “member”).

Multiple temporalities in CSR reporting hinge substantially on proximal and distal chronotopes; accordingly, I focused on these two topics. These two topics are directly relevant to calibrating the future, balancing multiple temporalities. The proximal chronotope is a spatiotemporal language to conceive of psychologically close events, whereas the distal chronotope is a spatiotemporal language for psychologically distant events. Because topic modeling is premised on polysemy, I was able to find overlapping words across the four topics. This implies that the seemingly same words could have semantically different meanings when combined with other words. For instance, I found the word ‘global’ is shown in both the proximal chronotope and the distal chronotope. Firms used the word ‘global’ to mention various stakeholders in many countries where they operate, and ‘global’ is also used to describe a firm’s long-term plans.

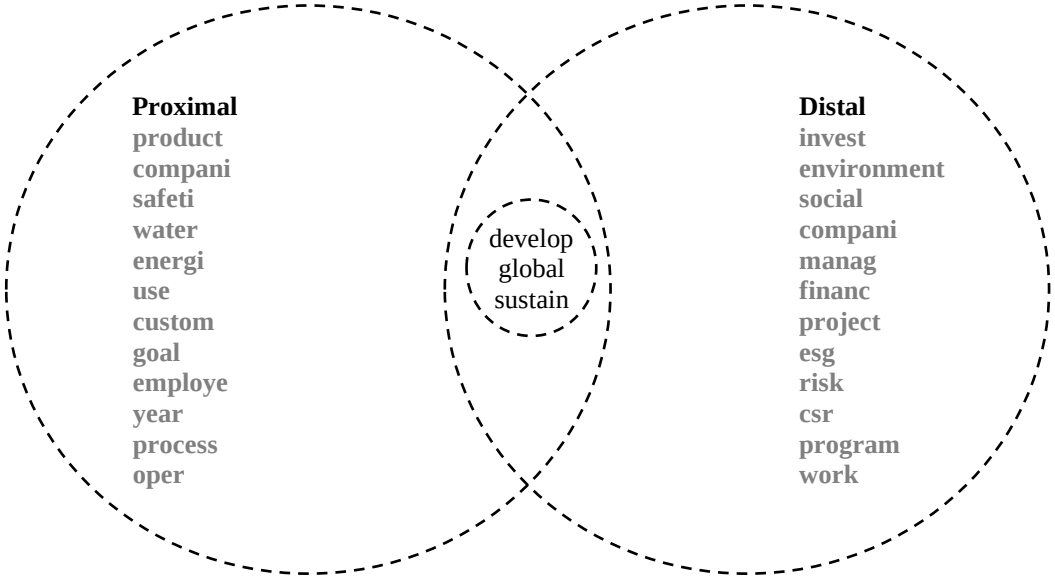
I first identified the overlaps among the two topics using the whole sample (Figure 1a) and using the final sample, frequent reporters (Figure 1b). I compared the overlapping words of the two samples for consistency. Although there were differences (i.e., “improve”, “work”, “global”, and “sustain”), I confirmed robust similarity over 100 terms between the two samples.

FIGURE 1a*
Shared Topics in CSR Reporting, 2009-2017 (all firms)



* *Stems used in the LDA analysis*

FIGURE 1b*
Shared Topics in CSR Reporting, 2009-2017 (100 firms)



* *Stems used in the LDA analysis*

I also conducted an in-depth qualitative analysis to trace how topics used to manage multiple temporalities changed over time. For example, I reviewed changes in the context of the distal chronotope topic over time in Goldman Sachs CSR reports in

2009, 2013, and 2017. In the 2009 CSR report, although the firm focuses on a wide range of stakeholders, the description is simple (e.g., client and broader society).

> *By doing so, we differentiate our advice and serve the interests of our clients by helping them improve their* ***environmental, social, and governance*** *practices. We believe this approach upholds our responsibility, advances the client's understanding and practice of* ***sustain****able actions effectively* ***manag****es* ***risk****, and yields greater benefits both for the client and broader* ***soci****ety. (p.6)*

In 2013 CSR report, Goldman Sachs emphasizes the distal chronotope topic about 15% more than in the 2009 report. The firm pays attention to stakeholders in general, but the included actors become more specific, such as individual companies and industry sectors.

> *Our* ***Invest****ment Banking and* ***Invest****ment and Lending businesses help provide capital and advice to advance* ***environmental****ly responsible* ***project****s and transactions*. ***Investment Manag****ement incorporates an understanding of* ***environmental*** *impacts and capabilities into our efforts to* ***manag****e and preserve the assets of our clients. Through our* ***Global*** ***Invest****ment Research Division, we integrate* ***environmental, social,*** *and other relevant factors into our fundamental analysis of individual companies and industry sectors. (p. 3)*

In its 2017 report, Goldman Sachs again stresses the distal chronotope topic more in comparison to the CSR report in 2013. The firm elaborates more on goals and targets to achieve beyond embracing stakeholders (e.g., sustainable economies, or a low carbon future).

> *We take an active approach to* ***managing ESG****-related* ***risk****s […] to build thriving,* ***sustain****able economies and to facilitate the transition to a low carbon future (p. 6)*

> *fastest-growing areas of our* ***Invest****ment* ***Manag****ement Division […] dedicated* ***ESG*** *and impact* ***invest****ing strategies and capabilities (p. 20) allows* ***client****s to […] to manage* ***risk*** *and long-term value, to pursuing measurable* ***environmental*** *and* ***social*** *impact (p.21)*

I observed similar subtle changes for each topic over time. The detailed illustrations by year are shown in Table 2. The other topic changes of the firm are also illustrated in Table 2.

TABLE 2
Goldman Sachs' CSR Reporting by Topic, 2009-2017

	Proximal	**Distal**
	product, **sustain**, *(dow)*, compani, safety**, global,** water, energy**, develop**, use, *(chemic)*, *(praxair)*, custom, goal, employe, year, process, oper	invest, *(citi)*, **global**, **sustain, develop**, environment, social, company, manag, financ, project, esg, risk, csr, program, work
2009	We are committed to increasing our use of recycled and environmentally certified wood, paper and print products, using energy-efficient equipment and purchasing more organic and **sustain**ably harvested products and supplies. Where appropriate, environmental performance criteria are integrated into our vendor contracts in support of this commitment. The ability to partner with us to provide **sustain**able products and services is an important consideration in selecting vendors. Co-**develop**ing commercially advantageous **sustain**able business solutions with our vendors has enabled us to both improve our own environmental performance and positively influence the environmental and social practices of the vendors in our **global** network. (p. 20)	We ask our financing and principal investing teams to conduct an environmental, social and governance (ESG) review for opportunities in the normal course of their due diligence before committing to business on behalf of the fi rm. As appropriate, advisory, trading and asset management teams also conduct ESG reviews. […] When we identify a potentially significant issue – including governance, the environment, labor or human rights – we prefer to address the potential issue and encourage the client to assume more **sustain**able practices. By doing so, we differentiate our advice and serve the interests of our clients by helping them improve their environmental, social and governance practices. We believe this approach upholds our responsibility, advances the client's understanding and practice of **sustain**able actions, effectively manages risk and yields greater benefits both for the client and broader society. (p. 6)

2010	In recent years, our business has evolved and become more complex. We recognize that this complexity gives rise to the potential for conflicts of interest and requires a robust suitability process. As a result, this requires ongoing diligence to ensure client and product suitability. It also means we must always be clear to ourselves and to our clients about the capacity in which we are acting […]. (p. 7) In 2010, we managed initial public offerings and other financing transactions that raised $8.9 billion for clients engaged in clean technologies and renewable energy. We co-invested $388 million in expanding renewable energy and green affordable housing initiatives. (p. 26)	Goldman Sachs supports public policy that fosters **global** economic growth, promotes financial stability, and improves communities and society. As such, we have a responsibility to understand the regulatory and political environments in which we have a presence, and to advocate policies we believe advance and protect our stakeholders' interests and the broader marketplace. In this way, we seek to be a constructive voice in the **global** financial regulatory reform process and are working with regulators to strengthen the financial system and reduce systemic risk, while supporting dynamic capital markets, entrepreneurship and innovation. (p. 9)
2011	We believe we can play a critical role in the vital transition to a low-carbon future by helping raise capital in the public and private markets and investing alongside our clients in clean technology sectors such as solar, wind, geothermal, energy efficiency, green transportation and advanced biofuels. The clean tech industry is expected to be a rapidly growing market and one that we believe is at a momentous point in terms of the expansion of technologies that will help diversify energy sources and improve the environment. (p. 10)	Our commitment to helping finance commercial solutions to the world's growing energy needs traces back to the publication of our Environmental Policy Framework in November 2005. Since then and as of the end of 2011, we have financed more than $24 billion and co-invested almost $4 billion of capital toward clean technology and environmentally beneficial projects. These investments have helped emerging clean tech industries achieve the economies of scale that will help them become competitive. While we cannot predict with certainty how the clean technology market will grow and evolve over the next decade, we believe that our $40 billion goal is achievable. By financing and investing in this growing market, we will both help serve the needs of our clients and contribute to solutions to a critical environmental challenge. (p. 11)
2012	This year we reduced the carbon footprint from our offices by 19 percent — well exceeding our initial target to reduce the footprint from our offices by seven percent from a 2005 baseline by 2012. We accomplished this entirely by deploying our **global** Carbon Reduction Framework, which challenges us to design, construct and operate our facilities and technology as efficiently as possible. Recognizing the impact of our data center emissions, in 2012 we went beyond our initial target by reducing the carbon footprint from both our offices and data centers by 10 percent from a 2005 baseline. We achieved this additional	Our GS **SUSTAIN** research team continues to expand its analysis of companies, further helping clients identify environmental, social and governance outperformers and structural leaders. In May 2012, GS **SUSTAIN** announced a major expansion of its analysis to nearly 1,400 mid-to-large-sized companies **global**ly, following the collection and analysis of nearly 100,000 ESG data points from publicly available sources. From its inception in June 2007 through the end of 2012, the GS **SUSTAIN** Focus List has outperformed the MSCI All Country World Index (ACWI) **global** equity benchmark by more than 40 percent. (p. 4)

	reduction with the purchase of a balanced mix of high-quality, credible Gold Standard and Voluntary Carbon Standard offsets that support the growth of renewable energy markets where we operate. We have committed to be carbon neutral across our facilities by 2020. (p. 5)	
2013	We continue to make progress toward our goal to be carbon neutral across our facilities by 2020. Our Carbon Reduction Framework challenges us to be innovative in the design, construction and operation of our facilities and technology to maximize efficiency. An example of such innovation is our recent public-private lighting collaboration with the U.S. Department of Energy, Lawrence Berkeley National Laboratory and Green Light New York to improve energy efficiency in our **global** headquarters. The Living Lab project consists of the retrofit of lighting, daylighting, shading and control systems on an occupied office floor, with the goal of analyzing and implementing new technologies that dramatically reduce energy use and costs, and significantly improve the interior environment for the occupants. The technologies with the greatest potential for widespread replication will be considered for wider use throughout our **global** real estate portfolio and made available to the design, construction and real estate communities. (p. 7)	Each of our business areas has an important role to play in implementing our commitments under the Environmental Policy Framework and contributing to environmental progress. For example, our Investment Banking and Investment and Lending businesses help provide capital and advice to advance environmentally responsible projects and transactions. Investment Management incorporates an understanding of environmental impacts and capabilities into our efforts to manage and preserve the assets of our clients. Through our **Global** Investment Research Division, we integrate environmental, social and other relevant factors into our fundamental analysis of individual companies and industry sectors. (p. 3)
2014	A key role we play in the transition toward a low-carbon future is assisting clients to meet their capital needs in **develop**ing clean energy solutions. In 2012, we set a goal to finance and invest $40 billion in clean energy over the coming decade. Last year, we continued to make significant progress toward meeting our goal with nearly $13 billion in financing and co-investments. The increase in capital deployed is reflective of the clean energy market and the innovative financing structures that are helping to unlock greater capital and bring capital efficiency to the market. We also served as financial advisor on several significant clean energy mergers and acquisitions transactions. (p. 45)	Established in 2001, the Urban Investment Group deploys a "double bottom line" strategy to invest the firm's capital to produce strong financial results, while also benefiting urban communities. Through public-private partnerships, UIG addresses capital needs in low- and moderate-income communities by creating and incubating innovative, **sustain**able investing models, including comprehensive community **develop**ment structures, social impact bonds and a first-of-its-kind Social Impact Fund that both have positive social impact and produce strong financial results. […] These innovative financial products have begun to make a difference, not only for the projects that they finance, but also for the incentives that they create for strengthening communities in need

		of capital as well as thoughtful planning to address long-term neglect. (p. 36)
2015	Environmental stewardship is not only about how we operate our business, but also about how we engage our people. Through programs sponsored across our **global** businesses, we discuss environmental issues, raise awareness and harness the talents of our people. Throughout the year, we publish topic-specific content, such as videos, infographics and podcasts, both internally and externally, to educate our people and engage with our external stakeholders on the evolving environmental landscape and Goldman Sachs' approach to these matters. We also offer a speaker series called Talks@GS that brings thought leaders to the firm to share innovative ideas and perspectives on a variety of themes, including on renewable energy, conservation and water. (p. 12)	ESG and impact investing have not only become powerful tools for addressing big challenges, but also one of the fastest-growing trends in financial services. It is a field that, in the United States and worldwide, we have helped to pioneer — as a financial innovator, leading investor, and collaborator with other financial institutions. A good example is our work with a major New York pension fund in 2015 to **develop** a $2 billion strategy that reduces the carbon emissions intensity of the fund's portfolio in a risk-managed manner. Working with Goldman Sachs Asset Management, the strategy integrates companies that, in aggregate, have greenhouse gas emissions up to 70 percent lower than those of the fund's US large-cap equity benchmark. (p. 8)
2016	We have made significant progress on the environmental commitments set out in our updated 2015 Environmental Policy Framework. We have achieved carbon neutrality for our **global** operations and business travel through a mix of certified renewable energy credits and carbon offsets. In 2016, we procured certified renewable energy credits equivalent to 90 percent of our **global** electricity consumption, and we aim to procure 100 percent renewable power to meet our **global** electricity needs by 2020. We plan to achieve this goal by prioritizing the use of long-term power purchase agreements that facilitate the **develop**ment of renewable energy resources, with the remainder through the procurement of certified renewable energy credits. (p. 11)	At Goldman Sachs, the growth of ESG investing has been significant, and it has accelerated since the acquisition of Imprint Capital, a leading ESG advisor, in 2015. We have seen a virtuous cycle in which demand has driven product and service innovation, creating new models for success and driving further demand. As a result, our assets under supervision in dedicated ESG strategies have grown significantly, to $6.5 billion by the end of 2016. Fundamental to this growth is an increased understanding that a disciplined approach to ESG investing can drive competitive risk-adjusted returns — just as with any other investment. Risk/return profiles of ESG portfolios now mirror the markets and span asset classes, fueling the evolution of impact investment strategies that meet conventional risk/return hurdles, but also include social and environmental impacts that are both intentional and measurable. (p. 5)

2017	We maintain net carbon neutrality and deploy renewable energy for our operations, and we continue to make progress toward green building certifications, responsibly sourced products, **sustain**able supply chain management and reduced water use and waste generation (p. 7)	We take an active approach to managing ESG-related risks […] to build thriving, **sustain**able economies and to facilitate the transition to a low carbon future (p. 6) fastest-growing areas of our Investment Management Division […] dedicated ESG and impact investing strategies and capabilities (p. 20/34) allows clients to […] to manage risk and long-term value, to pursuing measurable environmental and social impact (p. 21)

2.5.3 Content Analysis

To examine the patterns in which firms pay attention to multiple temporalities, I conducted content analysis using CAT scanner software. The essential idea of content analysis is that words that belong to a category represent the thoughts and cognitions of speakers (Krippendorff, 2004; Weber, 1990). Archival data over time typically contain a number of textual components which are valuable sources to explain firm behavior. The content categories are identified as concepts of interest.

I applied the content analysis to the CSR reports of 100 firms that I used for topic modeling. I first conducted the cleaning process and searched for dictionaries that help identify temporalities. I used a dictionary about time horizons developed by DesJardine and Bansal (2019). They analyzed managers' talks at quarterly earnings conference calls with analysts with an assumption that speakers' cognitions are well manifested in their language (Langacker, 2008). They created two categories: terms that signal a short-term horizon and terms that signal a long-term horizon. Words implying a short-term horizon include current, instantaneous, month, temporary, and year. Words that are representative of a long-term horizon are century, commitment, endless, longer period, preserve, and perpetual. Following the measure of DesJardine and Bansal (2019), I defined short-term orientation as the number of short-term horizon words divided by the sum of the number

of short-term horizon words and long-term horizon words. Long-term orientation was defined as the number of long-term horizon words divided by the sum of the number of short-term horizon words and long-term horizon words.

I also computed elasticity that estimates how far a firm linguistically stretches or contracts its temporal orientation from the short-term to the long-term future. Elasticity was measured by the ratio, the difference between the number of long-term horizon words and the number of short-term horizon words (numerator) divided by the sum of the number of short-term horizon words and long-term horizon words (denominator). Bifocality, which captures a firm's simultaneous attention on multiple temporalities, was operationalized as the lower value between the number of short-term horizon words and the number of long-term horizon words (numerator) divided by the sum of the number of short-term horizon words and long-term horizon words (denominator). The summary of the variables of interest is presented in Table 3.

TABLE 3
Descriptive Statistics

	Mean	Standard deviation	25th percentile	50th percentile	75th percentile	Min	Max
Proximal Chronotopes	0.0857	0.1718	0.004	0.0096	0.0406	0.0002	0.7349
Distal Chronotopes	0.0662	0.141	0.0045	0.0114	0.0425	0.0004	0.8118
Short-term orientation	0.5024	0.1059	0.437	0.5	0.5625	0.1176	1
Long-term orientation	0.4976	0.1059	0.4375	0.5	0.563	0	0.8824
Elasticity	-0.0047	0.2118	-0.125	0	0.126	-1	0.7647
Bifocality	0.42	0.0694	0.3919	0.4375	0.469	0	0.5

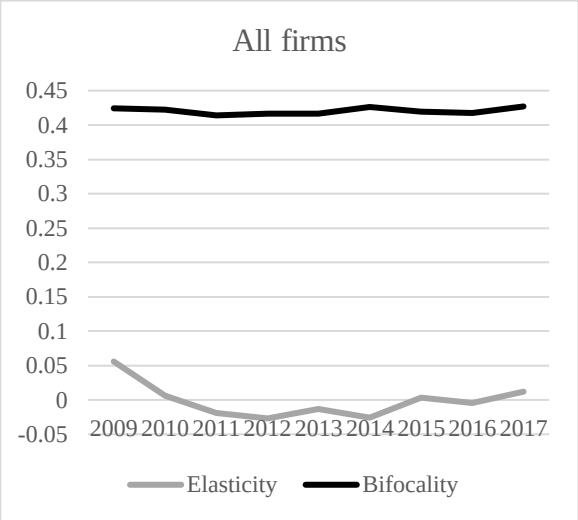
2.5.4 Visual Analysis

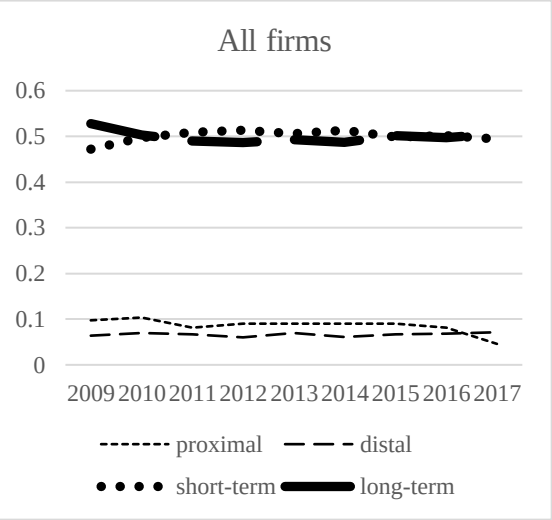
To explain how firms calibrate the future and balance multiple temporalities, I first analyzed all 100 firms' foci on elasticity and bifocality. Figure 2a exhibits my analysis. I found that overall, both elasticity and bifocality are stable in the post-crisis period. Elasticity has a form of a gradual U-shaped curve and bifocality has a similar curve with much less fluctuation. Firms stretched the present to the future more sensitively in the immediate aftermath of the Financial Crisis, and this tendency was gradually tempered down over time. For several years around 2013, when the U.S. economy was on the end side of the recovery, firms focused more on the short-term. However, their attention to the long-term future bounced back when the economy became more stabilized afterward.

I additionally analyzed how each dimension constructs a firm's future orientation; this analysis is presented in Figure 2b. The long-term has a gradual U-shaped curve whereas the short-term has an inverted U-shaped curve. The distal chronotope is stable yet moves upwards. The proximal chronotope has a steady pattern that drops in 2017. I observed that firms sought to calibrate time in the short-term and the long-term and the pattern of the long-term dimension is consistent with the shape of elasticity in Figure 2a. Surprisingly the proximal chronotope and the distal chronotope are used constantly in a similar manner regardless of whether firms focus more on the short-term or the long-term. The balanced use of the two chronotopes implies that both proximal and distal chronotopes are necessary to balance multiple temporalities, especially having bifocality. Although ways in which words of the proximal chronotope and words of the distal chronotope are combined may be distinct by each firm's business focus, firms rely on

both chronotopes to find temporary equilibrium between the short-term and the long-term.

FIGURES 2a and 2b
All Firms





My findings suggest that firms constantly calibrate the future for optimizing in the short-term future and the long-term future. The idea of the optimal temporality of the future is produced by linguistic calibration over time, and such calibration appears in the projects that firms report on. Reporting traces where the future is being negotiated in words because firms do not report on everything; they choose to report on topics they deem relevant. In my visual analysis, the elasticity line represents how the calibration happens at the micro-level of words, and the bifocality line shows the overlap between the short-term future and the long-term future on the future continuum. Firms transition back and forth, rather than switch from one to the other, by blending words describing the short-term future or the long-term future every year.

I then divided the final sample into the financial sector and non-financial sectors to delve into how optimal temporality is determined by the extent to which a firm is

sensitive to stronger short-term pressure. Figure 3a exhibits elasticity and bifocality of financial firms. As seen in the pattern of all firms, elasticity has a form of a gradual U-shaped curve, and bifocality follows this pattern. Figure 3b shows annual changes of each dimension for firms' future projections. As I saw in the graph of all firms, the long-term dimension also has a gradual U-shaped curve while the long-term dimension has an inverted U-shaped curve. The extent to which these two dimensions are used in financial firms is greater than all firms, implying that financial firms are more attentive to words of temporal horizons for calibrating the future. I observed that both chronotopes are stable, but financial firms tend to rely much more on the distal chronotope to calibrate the future and maintain bifocality. Stronger emphasis on the distal chronotope might result from greater sector-specific market pressure on firm performance. Because the Financial Crisis originated from the extreme short-termism of investment banks, financial services firms that were directly or indirectly related to the crisis were thoroughly scrutinized by stakeholders and thus became more explicit about their long-term orientation with the distal chronotope.

FIGURES 3a and 3b
Firms in The Financial Sector

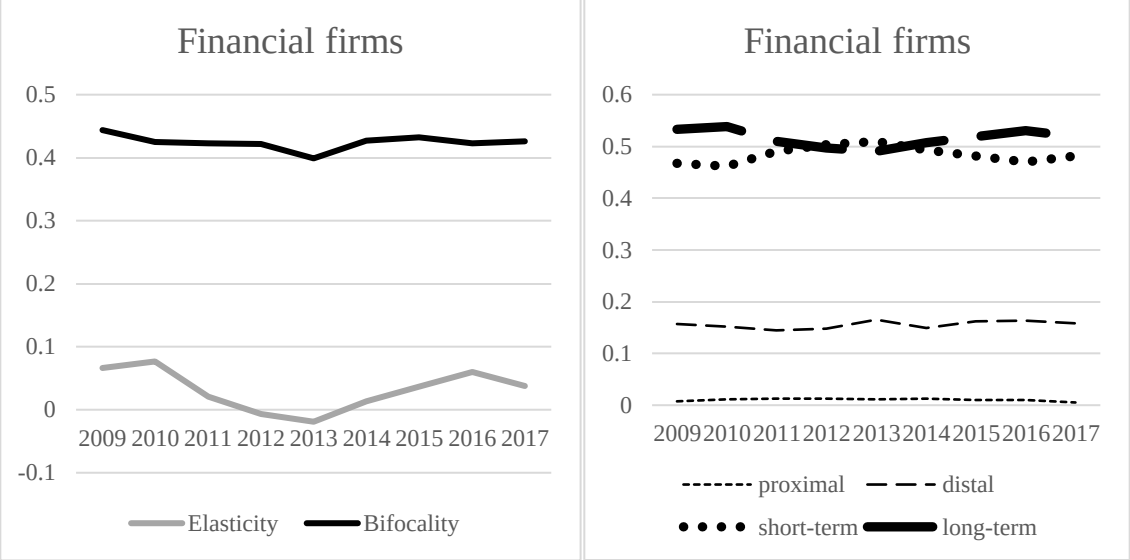
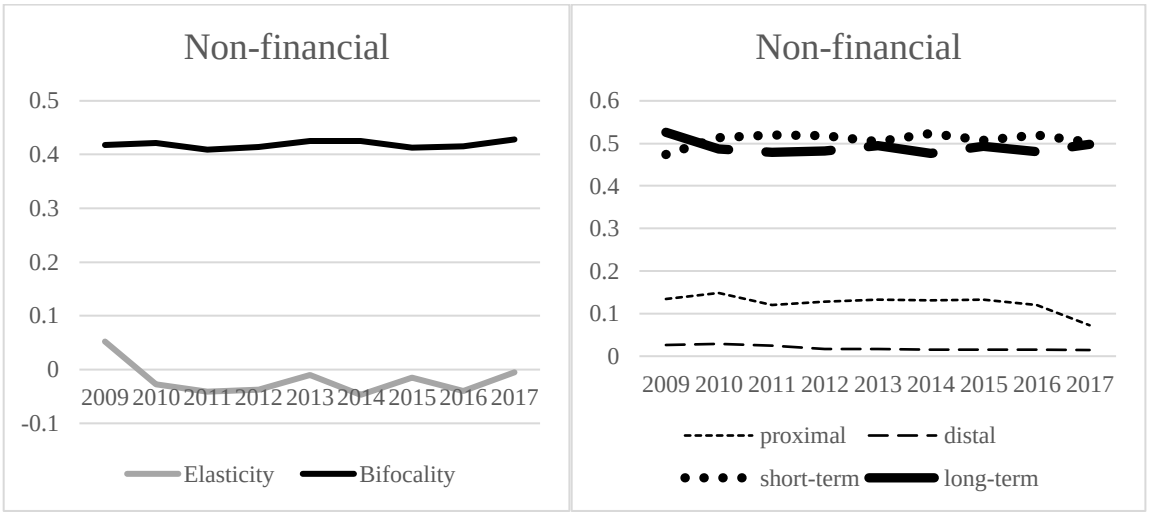


Figure 4a presents elasticity and bifocality of non-financial firms. Elasticity has a gradual U-shaped curve but there are more ups and downs than the elasticity line of financial firms. However, the degree of fluctuation is small after 2009 and the bifocality line is steady for the period of my study. Relative to firms in the financial sector, firms in the non-financial sectors more actively searched for temporal equilibrium and were more flexible at stretching and contracting the future. Figure 4b exhibits specific dimensions that impact firms' elasticity and bifocality. I found that the long-term dimension has a similar shape to the elasticity line while the short-term dimension has the form of an inverted U-shaped curve. Proximal and distal chronotope lines are stable, but firms in the non-financial sectors relied more on words of the proximal chronotope, which is the opposite of firms in the financial sector. The use of the proximal chronotope decreased over time but the proximal chronotope was used more often than the distal chronotope. Because firms in the non-financial sectors needed to cope with sudden changes in the external environment under less direct market pressure, they used the proximal

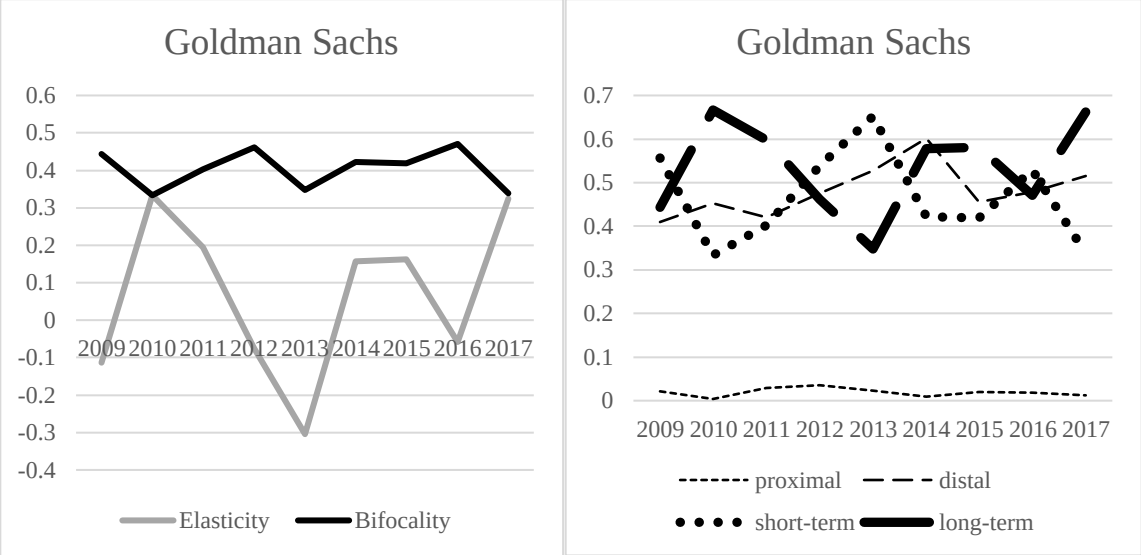
chronotope in their long-term future projection right after the crisis, and as the market gradually recovered, the importance of the proximal chronotope reduced.

FIGURES 4a and 4b
Firms in The Non-Financial Sectors



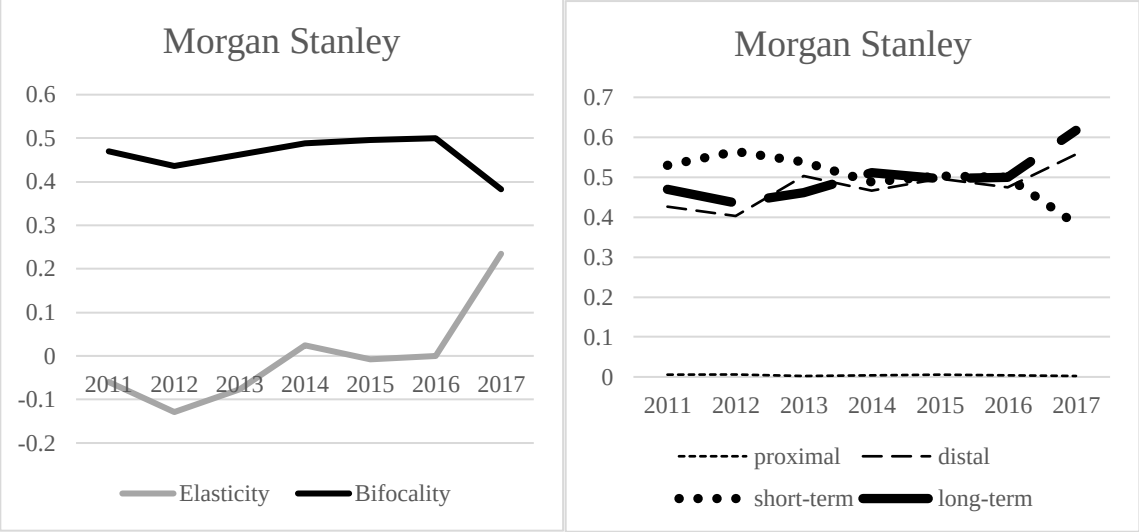
I then analyzed how leaders of the financial and non-financial sectors strived to find temporal equilibrium. My analysis of leading firms in the financial and non-financial sectors enabled me to discover how firms with more clear visibility responded to the Financial Crisis and found optimal temporality. Figures 5a and 5b present the graphs of Goldman Sachs. Starting from 2010, the elasticity of Goldman Sachs also has a U-shaped curve, but the degree of fluctuation is much greater than average firms in the financial sector. Because Goldman Sachs was targeted as one of the firms responsible for the Financial Crisis, the firm was careful at stretching its long-term future. Leading firms such as Goldman Sachs calibrated significantly in terms of the content and manner of their messaging. Figure 5b reveals that Goldman Sachs struggled with optimizing its temporalities between the short-term and the long-term futures, incorporating the distal chronotope in the optimization.

FIGURES 5a and 5b
Goldman Sachs



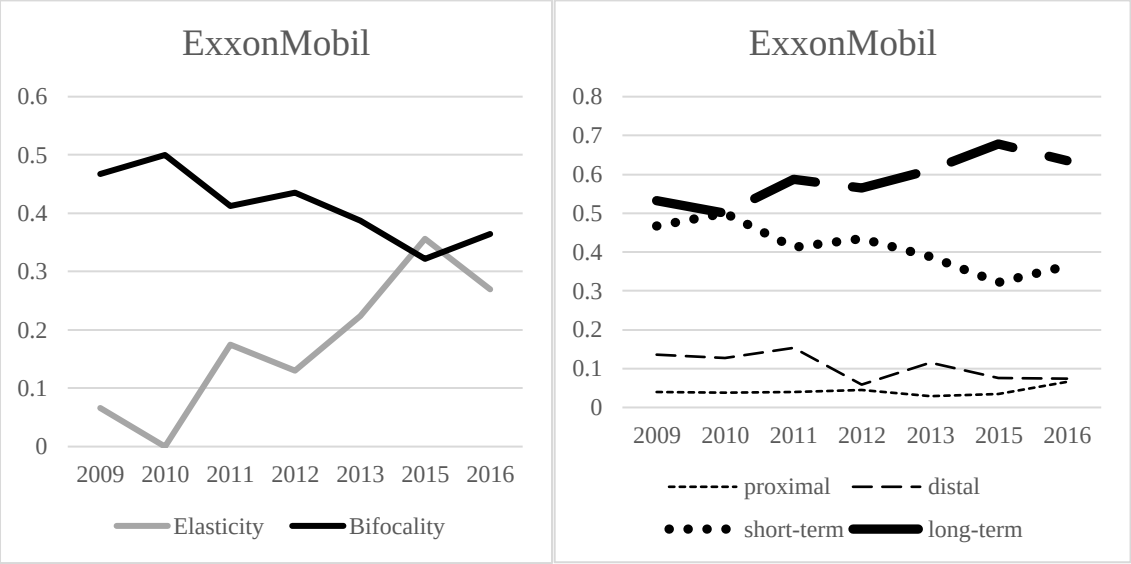
I also analyzed the case of Morgan Stanley, reflected in Figures 6a and 6b, and found patterns different from those of Goldman Sachs. While Goldman Sachs demonstrated rather radical fluctuations in its calibrating the future, Morgan Stanley calibrated the future clearly, gearing towards the long-term future. Data availability prevented me from analyzing the firm's future calibration in the immediate aftermath of the crisis but confirmed a steady pattern from 2011. For the specific dimensions of Morgan Stanley's calibration in Figure 6b, I found a lower degree of fluctuation. Surprisingly, the firm calibrated its future and embraced the long-term future by actively using the distal chronotope. The pattern of the use of the distal chronotope is very similar to that of the long-term dimension.

FIGURES 6a and 6b
Morgan Stanley



I performed additional analysis on ExxonMobil, the natural gas company in the non-financial sector, shown in Figures 7a and 7b. Figure 7a demonstrates that ExxonMobil continuously calibrated time towards the long-term future. The firm changed its direction to the short-term or the long-term recurrently, but it eventually headed toward the long-term future. Figure 7b shows changes in the specific dimensions that ExxonMobil used for future calibration. The long-term dimension increases whereas the short-term dimension decreases over time.

FIGURES 7a and 7b
ExxonMobil



2.6 Discussion

This paper examines how firms linguistically combine multiple temporalities and calibrate the future after the 2008 Financial Crisis. My findings show four distinctive linguistic components: responsibility, chronotopes (spatiotemporal language), reporting, and sectoral language. Responsibility relates to how firms linguistically represent their responsibilities (e.g., financial and social) and chronotopes are concerned with spatiotemporal dimensions that are used to conceive of temporalities. Reporting is associated with firms' sharing their reports with stakeholders. Sectoral language pertains to sector specific issues that firms in one sector are commonly faced with. Word assemblages in three categories are adopted together in attending to multiple temporalities.

My findings discover linguistic constituents (chronotopes) of temporality and changing patterns of the constituents over time. In the post-crisis period, firms skillfully

use chronotopes to contract and stretch out their perceptions of time while seeking to engage with short-term and long-term perspectives. For publicly traded firms in the U.S. and Canada that publish CSR reports frequently, the use of proximal and distal chronotopes is stabilized. Yet in the divided sample, this tendency does not hold. Financial firms, under greater short-term pressure, are more attentive to temporalities and place greater emphasis on distal chronotopes than proximal chronotopes. Non-financial firms, in contrast, attend temporalities to a lesser degree and these firms use more proximal chronotopes than distal chronotopes. The findings offer that firms that are required to meet short-term expectations tend to increase their temporal scope through language, which could balance short-term and long-term perspectives. Non-financial firms have lesser pressure and thus, they arrange multiple temporalities in the midground.

This paper makes several contributions. First, it adds to the literature on time perspectives by showing how firms collectively restructured multiple temporalities after the Financial Crisis. Previous studies have looked at the multiplicity of temporalities and yet much of the work focuses on individual cases or firms in predictable situations (Hernes et al., 2020; Reinecke & Ansari, 2016). After the Crisis, firms confronted unforeseen challenges from fluctuations in the market and changing demands from diverse stakeholders. Firms, as such, carefully sense the environment and adjust their strategies, which accompanies temporal restructuring. My findings show that in the wake of the Crisis, many firms sought to grapple with multiple temporalities and balance short-term and long-term perspectives in their own way.

This study also contributes to growing interests in how linguistic theories and tools enrich our understanding of temporalities (Bothello & Salles-Djelic, 2018; Crilly,

2017; Pencle & Mălăescu, 2016) by inductively revealing how combinations of words, particularly words that reflect spatiotemporal dimensions, are frequently used together. Although researchers have studied how distinct time perspectives are understood (Brigham et al., 2014; DesJardine & Bansal, 2019), how subtly language shifts and influences our perceptions on time remains underexplored. By adopting topic modeling, I identify chronotopes that entail spatiotemporal dimensions. Firms rely on chronotopes to contract or stretch their timelines towards the future, constantly and subtly updating multiple temporalities.

Moreover, this study contributes to the decoupling literature by highlighting constant recombination of linguistic constituents matched with environmental conditions. Prior studies have elucidated that firms learn from the past and adjust their decoupling practices in response to inconsistent institutional pressures (Crilly, Zollo, & Hansen, 2012), the discussion stopped short of how such learning and adjustment could take place. In this paper, I illustrate patterns of firms' temporal negotiations through language that temporarily accommodate competing demands in the environment. Under the pressure that forces firms to repeatedly (re)configure decoupling practices, language could inform how and when the decoupling happens.

Last, my findings underscore the underappreciated functionality of sustainability reports in setting and maintaining a spatiotemporal resolution of corporate attention over significant periods of time (Basu & Palazzo, 2008). Sustainability reports are viewed as a tool to legitimize a firm's identity or to manage its impression or reputation. Through these documents, firms also present how they conceive of and incorporate multiple

temporalities at different levels (e.g., the entire organization, goals, projects, etc.), which helps to communicate with stakeholders and search for temporal equilibrium.

This study is exploratory and thus subject to the following limitations. Firstly, disruptions from the Crisis can cause different strains, influencing parts of a firm rather than the whole. However, my paper aggregates such strains at the organizational level to display distinctive patterns of communication after the Crisis. Future research can delve deeper into communicative process at a more micro level, which will offer a nuanced view of the role of communication. Secondly, I look at the impact of the Financial Crisis which is an unexpected disruption. It is possible that firms may engage with linguistic interactions differently in expected disruptions, such as product recall. Faced with this type of disruption, firms may linguistically engage more intensively with internal actors than outside actors, possibly helping them bounce back more quickly. In addition, my sample, sustainability reports, is a written and formal form of communication channel. Other types of communication channels, such as conference calls, shareholder meetings, or manager interviews, may elicit different messages.

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CHAPTER 3: HOW THE FUTURE GOT ITS MEANING: A MID-RANGE THEORY OF LANGUAGE-BASED CSR

3.1 Abstract

I contribute a mid-range theory of language-based CSR by showing how frequent CSR reporters linguistically constructed their futures in the aftermath of the 2008 Financial Crisis. I extract and interpret future-focused vocabularies by using latent dirichlet allocation (LDA) topic modeling for sustainability reports issued by publicly-traded firms in the U.S. and Canada from 2009 to 2017. I then use fuzzy set qualitative analyses to inductively derive four linguistic recipes by which firms differentially qualify their pre-Crisis financial and social responsibilities with distal and/or proximal descriptions of their projects using time-space word registers (chronotopes) to (1) numericalize, (2) prioritize, (3) anthropocenize, or (4) communalize their futures. All four recipes predict multiple dictionary-based measures of firms' futures, lending support to my working hypothesis that firms can learn how to simultaneously attend to both the short and long term, that is, bifocalizing their futures.

Keywords: CSR, future, vocabularies, topic modeling, fsQCA.

3.2 Introduction

In the face of grand challenges that bring about high uncertainty and obscurity, researchers call for firms to attend to the long term (Flammer & Bansal, 2017; Wenzel et al., 2020). Although the long-term future remains unknown, firms can stake specific meanings (Comi & Whyte, 2018). Recent inductive studies suggest that firms can lengthen their horizons by concretizing distal actions (Augustine et al., 2019; Feuls, Hernes, & Schultz, 2021).

In this essay, I highlight one important way of constructing the future through language (Crilly, 2017). Several scholars have illuminated different linguistic means, including as frames (Cornelissen & Werner, 2014), narratives (Fenton & Langley, 2011), or discourses (Knights & Morgan, 1991), through which repeated acts of communication re-orient a firm's attention to a future different from the present and the past (Kaplan & Orlikowski, 2013).

I seek to explain the surprising phenomenon of firms lengthening their temporal horizon from short- to long-term futures following the Financial Crisis (Barton et al., 2017) by following firms' communications over time. My research question asks: *how do firms linguistically represent their futures after disruptive events*?

I answer this research question inductively by exploring CSR reports of public firms in North America for the decade following the 2008 Financial Crisis. I follow frequent CSR reporters because their given commitment to addressing sustainability issues (Bansal et al., 2018) and their shared reporting requirements ensure sufficient granularity in their communications to compare how they linguistically update the temporal horizons of their activities over time.

I combine topic modeling and fuzzy set Qualitative Comparative Analysis (fsQCA) to induce emerging linguistic patterns. Topic modeling allows me to recognize common and recurring word assemblages. fsQCA enables me to identify different patterns of attentional engagement by revealing linguistic recipes frequent reporters used to describe their futures.

The emotionally charged, stakeholder demands (Giannarakis & Theotokas, 2011; Kemper & Martin, 2010) prompted most firms to rethink their responsibilities, beyond the financial short term to the more social long term. Although evidence concerning the upsides of long-termism (Barton et al., 2017) and/or the downsides of short-termism (DesJardine & Bansal, 2019) was only available later, frames, discourses, and narratives began to lengthen time horizons in the immediate aftermath of the Financial Crisis (Pozner et al., 2010).

For example, major public firms, such as Morgan Stanley and Goldman Sachs, publicly questioned and soon shifted their temporal horizons from the short term to the long term (Gandhi & Schenk, 2018; Lal & Mazzanti, 2014). These firms' public reports captured how they first challenged the legacy of their pasts and then deliberately changed the meaning of their futures (Darr & Koller, 2017). Over time, they refocused their goals on progressively longer-term futures and developed innovative metrics such as multi-year returns on investment or ten-year cycle economic performance (Barton & Wiseman, 2014).

My analysis of emerging word assemblages in the CSR communication of frequent reporters reveals that all public firms included in my sample progressively lengthened their time horizons following the Financial Crisis. I also induce how these

firms employed distinct combinations of the same word assemblages to imbue their long-term futures with different meanings. My study complements recent accounts of how a firm constructs the meaning of its future (Augustine et al., 2019; Feuls et al., 2021) by offering a more granular linguistic explanation for the emergence of long-termism.

3.3 Theoretical Background

3.3.1 A Language-based View

Prior work in strategy has emphasized the vital and varied roles of language (Cornelissen et al., 2015; Crilly, 2017). Language can serve as a channel through which cognitive content is exchanged between communication actors (Thornton et al., 2012). From this perspective, language does not have agency and thus content of a message encoded in language is delivered as is. Language merely reflects and transfers what a speaker perceives and thinks.

Language can also be performative1 (Austin, 1962; Hall, 1999). Scholars taking the performative approach claim that language has agency, in that particular utterances could create rather than merely transfer meaning, so that utterances themselves could trigger cognitive or behavioral change. The performative role of language emphasizes the characteristics of communication actors, the contexts, and/or the timing. For example, Rhee and Fiss (2014) examined how framing languages influence target audience's perception and evaluation by looking at a firm's rationale for the poison pill adoption and

1 In linguistics, language performativity is defined broadly in two ways. The first model, argued by Austin (1962) and Searle (1982), is that utterances perform an action in the very saying of them. This model has been criticized as it overlooked diversity of agency, linguistic practices and language ideologies. Complementing such deficiency, Butler (1990) expanded the notion of language performativity to argue that language becomes performative when communication actors actively and repeatedly create and recreate a cognitive content in language, and such linguistic practices further constitute a message to be transferred. To avoid confusion, in this essay, language being performative is following the definition of Austin (1962) and Searle (1982). I follow Butler's (1990) definition of constitutive language.

investors' reactions. They argued that the identity of a speaker and the visibility of the focal firm's action determine the effectiveness of language performativity. The performative approach has so far largely focused on the speaker, and its power via linguistic agency on the listener.

A subset of the performative view further argues that language can be constitutive (Ashcraft et al., 2009; Butler, 1990), treating linguistic exchanges as a form of social action being produced and reproduced jointly by a speaker and a listener (Ahearn, 2016; Cornelissen et al., 2014). Through language, interacting actors re-create the cognitive and behavioral content together, often over time. When a speaker and a listener, together, jointly pay attention to a particular issue, they co-generate new meanings. Through repeated and continuous interactions, meanings are (re)created and shared between the speakers and the listeners.

In this essay, I treat language as constitutive for two reasons. First, the frequent CSR reporters included in my sample do not merely speak to, but also interact with, potential audiences. Second, over time, these interactions can reorient a firm's attention towards different projects and stakeholders.

3.3.2 Language, Communication and Attentional Engagement

Language can be constitutive and plays an agentic role in shaping attention (Ocasio et al., 2018). The constitutive approach emphasizes how repeated communicative practices between organizational actors shape attentional engagement, which in turn influences ways in which the actors think and act (Ocasio et al., 2018). Language is further translated and transformed by an actor's attentional engagement with a particular

issue across a firm's various communication channels and over time (Ocasio & Joseph, 2008).

Language influences the direction and the extent of attentional engagement. Frequent use of language could direct attention to a particular issue, whereas the absence of language could steer attention away. Language can be used to distort a listener's attention. In this view, a speaker intentionally uses or omits certain language to disrupt information delivery to the listener. One example is the use of vague language in corporate communication to deter a competitor's behavior (Guo et al., 2017). Guo and her colleagues found that such vagueness significantly hinders potential entrants' market entry by impairing a rival's ability to interpret valuable information. Language itself can be a powerful strategic action that directly triggers competitive interactions with peers. Rindova, Becerra, and Contardo (2004) view language as a substitute to strategy, suggesting that firms play language games. Language is constitutive of strategic actions and changes the product market's demands, thereby intensifying rivals' competitive responses. Furthermore, language could create language. From this perspective, language constitutes a continuous stream of communication that evolves dynamically. The earlier use of language may carve out very different and robust paths for firms through the combinations of vocabularies. Different combinations of the same generic words could converge into or diverge from the original patterns of attentional engagement, gaining new meanings as a result.

The bypassing and the substituting effects of language have been theorized and observed between firms and between a firm and its stakeholders. In this second essay, I

examine how language can create the future by exploring the emergence of linguistic recipes over time.

3.3.3 Time Perspectives about the Future and Future Making

Researchers have explained the effects of temporal horizon (Miller, 2002; Reilly et al., 2016), temporal focus (Nadkarni & Chen, 2014), and temporal work (Kaplan & Orlikowski, 2013). The conventional way firms attend to their futures is through the costs and benefits of decisions to be made (Laverty, 1996). Economic modeling treats time as a unit of measurement (i.e., quarterly, bi-annually, or annually). The future is conveniently divided into intervals depending on which window is contemplated, separating the past, present, and future, or the short from the long term. The central dilemma is intertemporal choice, specifically, how firms trade-off the uncertainty of the long term. The future is quantitatively calibrated and compressed. Many other characteristics of time, such as flow, speed, and continuity from the present, are overlooked. As a result, the value is exponentially discounted to the extent that the future is delayed, which brings about a strong and robust preference for the near future (Berns et al., 2007). Economic modeling of the future remains dominant because it simplifies the cost-benefit allocation of multiple firm activities, which facilitates efficient strategy development and decision making. However, it blindsides firms to issues and imaginaries that can dramatically disrupt their operations.

Scholars have also looked at *the other* time (Shipp & Jansen, 2021), underscoring the subjective experience of time and emphasizing how language or visual artefacts can help strategic actors notice, interpret, and interconnect different experiences of time. Many temporal characteristics, such as rhythm, continuity, and psychological distance to

the future, enrich strategic actors' abilities to plan ahead (Tang et al., 2019). Subjective time is malleable and idiosyncratic, and strategic actors can create temporal structures (Shipp & Richardson, 2021). Time is perceived as a continuum. For example, Kaplan and Orlikowski (2013) argue that past, present, and future are connected, and the three temporalities could be (re)constructed by how each time is interpreted repeatedly. They show that strategy accounts that lead to changes hinge greatly upon recursive temporal work processes by which various organizational actors who engage in different practices reinterpret the past and the present, imagine the future, and interact with other members. By going back to the past and the present, the actors begin to synthesize new meanings of time that are open to being reconstructed. If their understandings of the future are not coherently shared, strategic decisions that are made after the temporal work eventually break down. Subjective time explains strategic decisions when multiple temporalities are inherently irreducible to a simple risk-return calculation that factors time out2.

Subjective time can be constituted through language and artifacts, such as PowerPoint slides, pictures, maps, and texts, in the future making. Comi and Whyte (2018) explain how specific images and stories shape a previously undefined future. Their findings show that at the early stage of the design process, the architects presented hand-drawn sketches of a new carpark with nearby stores for the next 30 to 50 years based on basic information at present and past. As the development progressed, the architects modified the project from a non-digital form to a digital form and accommodated changes with detailed information. The architects updated their interpretations on tracing paper over the existing sketches and eventually materialized the

2 Note that a firm could juxtapose both the quantitative modeling and the qualitative description. These two ways may co-exist, yet each delivers a distinct structure and characteristics of the future.

imagination into a cardboard carpark model. The project development process became more specific as it was refined, and yet, the interpretation moved back and forth over time if necessary. Similarly, Augustine and her colleagues (2019) focus on the constitutive role of language in future making in the context of geoengineering by introducing the notion of temporal distance—near future and distant future. They emphasize how the future is realized by multi-model discourses at the level of conversations. Although the initial imaginaries are produced by organizational actors, the following interactions through language and synthesis of discourses with different perspectives transform the ambiguous future into as-if reality.

3.3.4 The Role of Language in Construing Time

One theory that explains how the future is constructed is construal theory (Athanasopoulos et al., 2017; Soderberg et al., 2015; Trope & Liberman, 2010). Construals refer to a way in which individuals perceive and interpret the world around them. Events in the distant future are imagined in abstract terms, whereas events in the near future are realized in concrete detail. The relationship is bidirectional; psychologically close futures are described by low-level (concrete) construals, while psychologically distant futures are captured as high-level (abstract) construals.

Construals are fundamentally constitutive. They are one of the key means by which we envision objects and events at and across time (Liberman & Trope, 1998). As a construed future become realized, it is stored as information and offers new reference points against which alternative futures can be construed. Conversely, updates in high-level construals can reset low-level construals (Augustine et al., 2019).

In the management literature, time is often construed using spatio-temporal metaphors (Athanasopoulos et al., 2017; Bansal et al., 2018). Words associated with space add concreteness to low-level construals and abstractness to high-level construals (Casasanto & Boroditsky, 2008). Spatio-temporal metaphors influence not only how time is perceived but also how futures are constructed in organizations (Crilly, 2017).

A few very recent studies brought time construals from the individual to the organizational (Augustine et al., 2019; Crilly, 2017) and field (Feuls et al., 2021) levels of analysis. These studies also moved beyond the ways in which time is interpreted at either proximal or distal construals to specify how firms move through time (Crilly, 2017) and specifically, how they transition between proximal and distal construals or vice-versa (Augustine et al., 2019). This essay expands recent research on the interplay between proximal and distal construals by exploring how these two construals emerge and intertwine over time.

To summarize, prior literature suggests that 1) language re-orients firms towards the long term by playing a central role in future-making; 2) language facilitates transitions between the short and long term by capturing and connecting proximal and distal construals; and 3) the meaning of the short and the long term is not given ex-ante but rather emerges and consolidates through linguistic iterations. I revise my research question from *how firms linguistically represent their futures after disruptive events* to *how firms linguistically give meaning to their long-term futures after disruptive events*.

3.4 Method

I used the fuzzy set Qualitative Comparative Analysis (fsQCA) to identify combinations of word assemblages that lead to future construction. This type of

comparative case analysis method provides a configurational approach that systematically reveals different combinations of the causal conditions (Fiss, 2011; Ragin, 2008). As fsQCA allows for the simultaneous consideration of multiple interdependent attributes for a given outcome of interest, it is well suited for my study, which investigates latent connections among the cognitive construals for future construction.

I first employed probabilistic topic modeling to extract cognitive construals and empirically validate my thesis. Topic modeling is a statistical method designed to uncover thematic information that runs through large archives of documents, connections among themes, and changing patterns (Blei, 2012; Blei et al., 2003). Using the Dirichlet distribution, my probabilistic topic model estimates the probability of a given yet hidden structure across the archives of sustainability reports. In this paper, thematic contents of the hidden structure are viewed as perceptions of firms. With identified cognitive construals, I conducted fsQCA to find emerging combinations of the time construals. In the following section, I introduce my data and sample and explain the topic modeling approach for validation. I then illustrate my coding schemes for the outcome and explanatory conditions and present the primary and supplemental fsQCA analyses.

3.4.1 Data and Sample

I used sustainability activity descriptions in corporate sustainability (social responsibility) reports3 for the period from 2009 to 2017, after the Financial Crisis. In sustainability reports, firms present their future goals and action plans. These activities and plans capture the allocation of attention towards different time horizons. For instance,

3 In this essay, sustainability reports include reports sometimes labeled as corporate social responsibility reports, corporate citizenship reports, or environment reports. If a firm publishes two kinds of reports, such as a social report and an environment report, then I chose the one with a broader coverage. By year, only one report of a firm is included in the final sample.

in the 2015 sustainability report4, the Dow chemical company details its commitment in 2015, including whether the firm met its own goals, processes through which it changed the operational process following GRI standards, and sustainability goals over the next ten years. Its report also illustrates Dow's leading role in sustainability management in the chemical industry as well as society at large by emphasizing several recognitions and awards in global communities. Such explicit presentations of time in the language of firm's annual corporate sustainability reports allowed me to capture granular changes in their temporal horizons over time.

I chose the sample period from 2009 to 2017 in the wake of the Financial Crisis. In the post-Crisis period, firms confronted a variety of challenges to rethink and modify almost every aspect of their business strategies including financing, global operations, and stakeholder management. Pressures for transparency and social responsibility also intensified.

I constructed the sample using GRI's Sustainability Disclosure Database, which stores and tracks corporate sustainability reporting. This coherent framework for sustainability reporting, especially the precise GRI standards on the presentation of goals and the disclosures of investments and outcomes (Manetti & Becatti, 2009), enabled me to compare how firms shift their allocation of attention from short- to long-term futures (Bansal et al., 2018).

I selected all public firms headquartered in North America (the U.S. and Canada) in the following sectors: agriculture, automotive, aviation, chemicals, energy, finance, healthcare, and mining. The selection of these industries covers firms that engage in both

4 The document is accessible in the following link, http://media-library.dow.com/WebContent/www-dow-com/Documents/Dow_2015_SustainabilityReport.pdf.

upstream (i.e., mining and chemicals) and downstream (i.e., energy and healthcare) activities, such that I could control for external impacts on firms' sustainability commitments and communication patterns. I hand-collected data using the GRI database and each firm's website when sustainability reports were not uploaded in the database or when documents were missing. I excluded reports that are not written in English to avoid any confusion. The full sample is comprised of 339 firms and the number of reports is 1,581.

I focused on 86 of the 100 frequent reporters5 analyzed in essay 1 (chapter 2) who also released 2018 reports. I relied on 691 reports for the 2009-2017 periods and 86 reports for 2018. I summarize the number of reports by year in Table 4.

5 The firms included in both samples had published sustainability reports for at least seven years during the nine-year period, from 2009 to 2017. I validated the topics to ensure consistency between essay 1 (chapter 2) and essay 2 (chapter 3).

TABLE 4
Number of Reports by Year

	2009	2010	2011	2012	2013	2014	2015	2016	2017	The total number of reports	The total number of firms	Mean by sector	Min	Max
Automotive	1	0	2	2	2	2	2	2	2	15	2	7.50	0	2
Aviation	4	3	5	5	5	5	5	5	4	41	5	8.20	3	5
Chemicals	5	8	8	8	8	8	8	8	4	65	8	8.13	4	8
Mining	9	11	14	14	13	14	14	14	12	115	14	8.21	9	14
Energy	6	9	10	10	11	11	11	9	10	87	11	7.91	6	11
Healthcare	6	7	9	9	9	9	9	9	7	74	9	8.22	6	9
Metal products	3	3	3	3	3	3	3	3	1	25	3	8.33	1	3
Financial services	16	26	34	31	34	33	34	32	29	269	34	7.91	16	34
Total	50	67	85	82	85	85	86	82	69	691				

3.4.2 Topic Modeling

Topic modeling is capable of processing voluminous textual data that contain granular information across multiple contexts. Topic modeling follows an unsupervised machine learning algorithm, enabling the discovery of latent information without predefined categories or codes. Using this method, I extracted word-cluster level information that could not be captured by other text analysis methods. Emergent, granular information reveals new patterns of language use, which helped me articulate how the future was deconstructed and newly generated after the Financial Crisis.

To conduct text analysis using topic modeling, I took three steps: (1) rendering corpus, (2) rendering topics, and (3) rendering theoretical artifacts (Hannigan et al., 2019). First, with a list of documents, I used several text preprocessing techniques to shape raw textual data into a corpus. Through the trimming process, I decreased the complexity of the textual data but preserved the important content for topic modeling analysis. I removed non-alphabetical expressions such as numbers, punctuation, and special characters. I then converted upper-case letters to lower-case letters and removed "stop words" which act as grammatical fillers but do not convey semantic meanings. Stop words cover different forms of pronouns, relative pronouns, articles, prepositions, and conjunctions. Examples of such words include 'my', 'we', 'which', 'whom', 'a', 'the', 'for', 'and', and 'nor'6. I further standardized words through the stemming process, which refers to a heuristics-based process of reducing words to their basic forms. The stemming process reduced diverse forms of vocabularies that deliver the same semantic

6 The full list of stop words is accessible at http://www.lextek.com/manuals/onix/stopwords2.html.

content in the corpus. Lastly, I eliminated infrequent words that appear in only 1% of the documents.

Secondly, I ran the LDA topic model on the corpora to generate a set of topics. The main goal of this step is to find the number of topics and inspect two outputs: a matrix of topic-documents and a list of words for each topic. One primary issue of the topic modeling is to determine the optimum number of topics that is broad enough to discover the hidden structure in detail but at the same time can elaborate on the area of focus. To identify the optimum number of topics, I conducted perplexity analysis, which is a statistical measure of how well a probability model predicts a sample. In general, perplexity with the lowest score is considered to be the best. For the analysis, I split the data into two subsets. I used the first subset to generate a training model that accounts for the topic structure. The second subset was used to estimate the effectiveness of the model with the first subset. The range of the number of topics was set between 5, 10, 15, 25, and 35 at first, and I found that the level of perplexity was low in the range between 5, 10, and 15. I further narrowed down the range from 5, 8, 10, 12, and 15 as the number of topics to be produced. The perplexity level is similarly low when the number of topics is 8, 10, 12, or 15. I thus ran LDA models with 8, 10, 12, and 15 as the number of topics, respectively, and selected a model with 12 topics, which gave more consistent arrangements of words for each topic. I used Gibbs sampling to infer topics.

To interpret the 12 topics obtained from the LDA modeling and assign a label for each topic, I performed an iterative process. I read the list of terms per each topic thoroughly and sought out stories behind the co-occurrence of terms individually. After the discussion of combinations of terms for each topic and meanings of the combinations

with my supervisors, I labeled topics. When there existed inconsistency, I inspected the weight of representativeness of the topic for each document, information about firm characteristics, and sectors, and traced back to the discussion.

3.4.3 Topic Modeling Findings

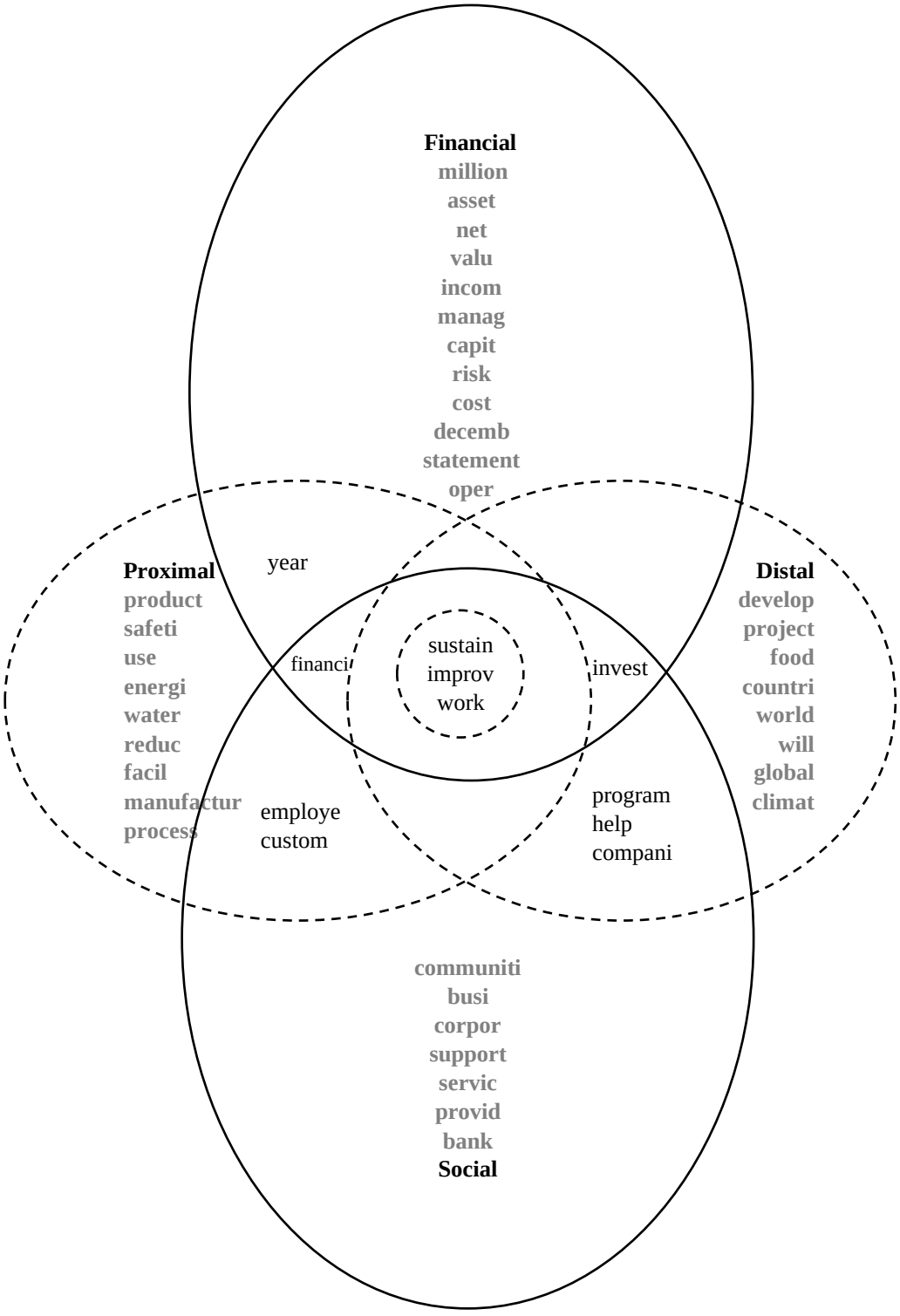
Each topic composed of a group of words is equivalent to a cognitive construal in CSR reporting. As I theorized, four topics—financial reporting, social reporting, the proximal chronotope, and the distal chronotope—relevant for future construction emerged. The financial reporting topic contains words relevant to financial statements, such as assets, net, income, and capital. Words that constitute the financial reporting topic are frequently observed in the part of the report where a firm is concerned about shareholders and investors. The social reporting topic encompasses words associated with stakeholder management, which include community, help, support, and employee. Words in this topic appear in reports describing how a firm enhances internal diversity and equality or contributes to the well-being of the community.

The proximal chronotope topic encompasses words such as product, site, reduce, and improve. This set of words is associated with but not strictly limited to short-term oriented, immediate issues. For instance, the Cambridge dictionary defines product as something that is made to be sold. This definition implies that the spatiotemporal range of the word is close to an agent (an organization). Verbs such as ‘reduce’ and ‘improve’ also imply incremental progress, which generally occurs in the short term. On the other hand, the list associated with the distal chronotope topic contains words such as project, invest, ESG, and new. This group of words is related to relatively more long-term oriented, far-fetching issues. The Cambridge dictionary defines project as a piece of planned work or

an activity that is finished over a period of time and intended to achieve a particular purpose. This definition is involved in attributes of remoteness. Words including ‘invest’ and ‘new’ imply more radical renovations and investment which could bring bigger changes.

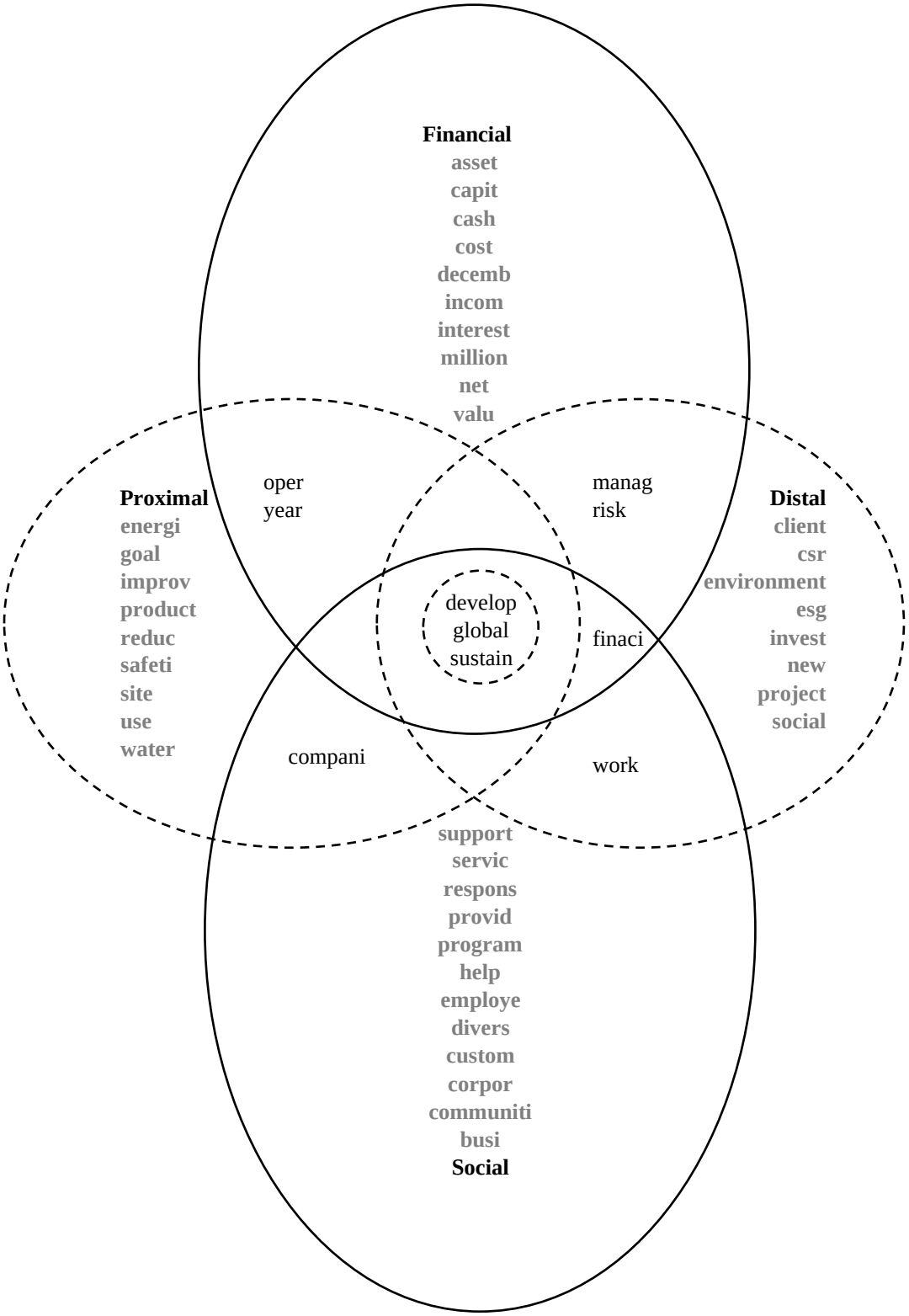
Words in the four topics overlap. The core assumption of LDA is that each topic is orthogonal; however, it is misleading to calculate correlations between the topics. I found overlaps among the topics qualitatively and expect associations among the words. Figures 8a and 8b exhibit the overlapping words across the topics. Although I observed the overlaps, it is premature to conclude that the overlapping words indicate any meanings. To uncover meaningful combinations of the topics, I leverage configuration analysis.

FIGURE 8a (all firms) [*]
Shared Topics in CSR Reporting, 2009-2017



[*] *Stems used in the LDA analysis*

FIGURE 8b (86 firms) *
Shared Topics in CSR Reporting, 2009-2017



* *Stems used in the LDA analysis*

3.4.4 fsQCA - Coding Scheme

fsQCA presumes that explanatory conditions and outcome are sets where each case might have membership. I coded membership in binary attributes using crisp sets (i.e., fully in or fully out). I used five-value fuzzy-sets to code attributes of continuous quantitative data from the topic modeling (i.e., fully in, more in than out, the crossover point, more out than in, fully out). The five-value scheme reflects the probabilities of each topic assignment most accurately. For the rest of the continuous quantitative data, I transformed the continuous quantitative data into fuzzy-set memberships using the calibration method in the fsQCA software. Consistent with previous studies, I used three qualitative anchors: fully in, the crossover point, fully out (Dwivedi et al., 2018; Ragin, 2009).

Outcome.

Proficiency in Future Language. To identify the extent to which a firm is proficient in future language that allows for constructing the future, I first created three variables: *bifocal future*, *near future*, and *long future*. Each variable captures a different focus that a firm has on the temporal continuum from the present to the future. *Bifocal future* indicates a firm's ability to envision the future in both the short term and the long term. *Near future* reflects a firm's ability to envisage the future in the short term (close to the present) while *long future* presents a firm's ability to contemplate the future in the long term (far from the present). My goal is to explore if particular combinations of word assemblages may prompt firms to construe and construct the future differently. I operationalized proficiency in future vocabularies in 2018 (a year after the end of the sample period) by drawing on the extant dictionaries about organizational time horizons

(DesJardine & Bansal, 2019) and several dimensions of long-term orientation (Brigham et al., 2014). Brigham et al. (2014) suggest that long-term orientation is a multidimensional construct comprised of continuity, futurity, and perseverance. Of the three dimensions, continuity and futurity were used to operationalize future language. Continuity is concerned about the consistency and longevity from the past to present and future. Words such as 'ceaseless', 'connected', and 'prolonged' are included in the continuity dimension. Futurity is associated with a firm's considerable efforts towards future goals and rewards. The futurity category contains words such as 'anticipate', 'hope', and 'forecast'.

Bifocal future indicates that firms are focused on both the near future and the long future. Using set relationships, I operationalize bifocal future as the minimum value of the two sets. I code each case's membership using the three qualitative thresholds: firms that are in the upper quartile (i.e., $\geq 75^{th}$ percentile) were coded as fully in, firms in the lower quartile (i.e., $\leq 25^{th}$ percentile) were coded as fully out, and the median was the crossover point. *Near future* is calculated as the minimum value between a short organizational time horizon and a continuity dimension of the long-term orientation. Similarly, each case's membership is coded based on the three thresholds: firms that are in the upper quartile (i.e., $\geq 75^{th}$ percentile) were coded as fully in, firms that are in the lower quartile (i.e., $\leq 25^{th}$ percentile) were coded as fully out, and the median was the halfway anchor. *Long future* is calculated as the minimum value between a long organizational time horizon and a futurity dimension of the long-term orientation. Each case's membership is coded by the three thresholds: firms that are in the upper quartile

(i.e., ≥75th percentile) were coded as fully in, firms that are in the lower quartile (i.e., ≤25th percentile) were coded as fully out, and the median crosses over the thresholds.

Explanatory Conditions. Using the topics extracted in stage 1, I constructed longitudinal measures of the four topics, considering the range over the time window between 2009 and 2017. Each topic was combined with other topics in distinct ways every year, even within the same firm, which implies a firm's focus on sustainability issues had shifted over time. Although the change could be sensitive to the base rates, and the base rates differ by sector, I believe that the difference in the percentage is a good proxy for how much topics changed in construing and constructing the future. This longitudinal measure reflects repetition and reproduction of the language use, which is how language can become constitutive on the future. As an example, I reviewed changes in the context of the distal chronotope topic over time in Goldman Sachs CSR reports in 2009, 2013, and 2017. In the 2009 CSR report, the firm focused on a wide range of stakeholders, and yet, the description was simple (e.g., client and broader society).

> *By doing so, we differentiate our advice and serve the interests of our* ***client****s by helping them improve their* ***environmental****,* ***social,*** *and governance practices. We believe this approach upholds our responsibility, advances the* ***client****'s understanding and practice of* ***sustain****able actions, effectively* ***manag****es* ***risk****, and yields greater benefits both for the* ***client*** *and broader* ***soci****ety. (p. 6)*

In 2013, Goldman Sachs emphasized the distal chronotope topic 15% more than in 2009 in its CSR report. The firm paid attention to stakeholders in general, but the included actors became more specific, such as individual companies and industry sectors.

> *Our **Invest**ment Banking and **Invest**ment and Lending businesses help provide capital and advice to advance **environmental**ly responsible **project**s and transactions. **Investment** Manag**e**ment incorporates an understanding of **environmental** impacts and capabilities into our efforts to manag**e** and preserve the assets of our **client**s. Through our Global **Invest**ment Research Division, we integrate **environmental**, **social,** and other relevant factors into our fundamental analysis of individual companies and industry sectors. (p. 14)*

In its 2017 report, Goldman Sachs similarly stressed the distal chronotope topic in comparison to the CSR report in 2013. The firm elaborated more on goals and targets to achieve beyond embracing stakeholders (e.g., sustainable economies, or a low carbon future).

> *We take an active approach to managing **ESG**-related risk**s** […] to build thriving, sustainable economies and to facilitate the transition to a low carbon future (p. 6) fastest-growing areas of our **Invest**ment **Manag**ement Division […] dedicated **ESG** and impact **invest**ing strategies and capabilities (p. 20)*

Other topics used for explanatory conditions changed from 2009 to 2017. The detailed illustrations of each topic are summarized in the Appendix.

Financial updating. *Financial updating* was measured by the probability of the financial responsibilities topic assigned in 2017 divided by that in 2009. Scholars have argued that a strong focus on financial responsibilities drives firms to be conscious about investor pressures and immediate numeric indicators, such as quarterly earnings and daily stock prices. Emphasis on financial responsibilities could accelerate temporal dimensions, such as reporting speed, and tend to shorten a firm's time horizon. I used the factor value

of topic probabilities to estimate differences of the topic focus over time, with a higher factor value reflecting larger temporal variance at the end, relative to the beginning, of the nine-year window. I coded each case's membership as fully in when a factor value is in the upper quartile (i.e., ≥75th percentile), more in than out when a factor value is between the upper quartile and the median, the cross-over point is the median, more out than in when a factor value is between the lower quartile and the median, and fully out when a factor value is in the lower quartile (i.e., ≤25th percentile).

Social updating. *Social updating* was also measured by the probability of the social responsibilities topic assigned in 2017, scaled by that in 2009. Social responsibilities lead firms to be aware of demands from various actors within and outside a firm and even in society at large. Each case's membership was coded as fully in when a factor value is in the upper quartile (i.e., ≥75th percentile), more in than out when a factor value is between the upper quartile and the median, the cross-over point is the median, more out than in when a factor value is between the lower quartile and the median, and fully out when a factor value is in the lower quartile (i.e., ≤25th percentile).

Proximal/Digital Updating. Based on the findings of Essay 1, I anticipated that both proximal and distal chronotopes co-exist within a document but found that their proportion changes over time. I therefore traced updates of the net change (increase or decrease) in the proportion, each represented at the end compared to the beginning of the nine-year reporting period. I measured *proximal and distal updating* by subtracting the probability of the respective topic in a firm's earliest report (2009 or shortly after) from firm's latest report (2017 or shortly before). I coded each case's membership as fully in when a factor value is in the upper quartile (i.e., ≥75th percentile), more in than out when

a factor value is between the upper quartile and the median, the cross-over point is the median, more out than in when a factor value is between the lower quartile and the median, and fully out when a factor value is in the lower quartile (i.e., $\leq 25^{th}$ percentile).

3.4.5 fsQCA - Analytical Technique

Sufficiency Analyses.

***Primary Analysis*.** My primary analysis examines whether the explanatory conditions (topic updatings) are sufficient to bring about proficiency in future language, exploring relations of the subsets. Consistent with previous QCA work, I first conducted sufficiency analyses to examine if any of the explanatory conditions, or a combination of them, are sufficient for proficiency in future language. I further studied each case by using qualitative analysis to understand how the combination of the explanatory conditions results in proficiency in future language (Dwivedi et al., 2018; Misangyi & Acharya, 2014).

The consistency metric evaluates whether theoretical causal attributes are sufficient for observing the outcome of interest. Consistency assesses the extent to which a subset relation is approximated, ranging from 0 to 1. A higher consistency score indicates the likelihood that a perfect subset relation (an attribute or a combination of attributes) for the outcome could be gauged. Because perfect subset relations are rare, I followed the conventionally accepted threshold for the minimum consistency (Dwivedi et al., 2018). In previous work, the threshold for "raw" consistency is 0.80 and the threshold for "proportional reduction in inconsistency" is 0.75 (Misangyi & Acharya, 2014; Ragin, 2009).

***Contingency Analysis*.** I ran a contingency analysis to test whether other causal conditions may influence a combination of the explanatory conditions for the future language proficiency. fsQCA does not allow for including control variables (Misangyi et al., 2017), and yet, I further considered potential attributes that could change primary configurations (Dwivedi et al., 2018). Although additional conditions have not been examined in the context of speaking future language or constructing the future, they might shift how firms update reporting and chronotope topics to construe and construct the future. The first contingency condition is whether a firm categorizes itself as a member of a particular sector. How a firm envisions its future with language could hinge on each firm's position relative to competitors and market factors. The second condition is whether narratives are written in an analytical way. When language is used analytically, a speaker relies on formal, logical forms of thought process, rather than an impromptu form. I checked whether each firm's reliance on analytical words influenced how the firm linguistically represented its future.

For the first condition, sectoral self-categorizing, each case's membership was assessed as a crisp set. Each case is coded as fully in when a firm's sectoral self-categorization is the same in 2009 and in 2017, and fully out when a firm's self-categorization differs between 2009 and 2017. With respect to the second condition, I used the calibration scheme of the fsQCA software to transform the continuous quantitative data. Each case was assessed as fully in when a firm's analytical style is greater than the upper quartile and as fully out when it is lower than the lower quartile. I used the median as the cross-over point.

Supplemental Analyses. I conducted two supplemental analyses. I first analyzed whether the specified explanatory conditions are sufficient for the absence of my outcome of interest—*not bifocal future, not long future, and not near future* (Dwivedi et al., 2018; Ragin, 2009). Second, I divided the final sample into two groups: financial firms and non-financial firms, to examine whether the combinations of explanatory conditions were more sensitive to this classification—a plausible situation given the higher expectations and stronger emphasis on financial responsibility for firms in the financial sector, which persisted after the Financial Crisis.

3.4.6 fsQCA Findings

Configurations Sufficient for Constructing Different Futures. The primary analysis revealed how explanatory conditions are combined. I present the findings in Table 5. My results show that there are four recipes for future language proficiency, covering 64 of the 86 cases in my sample (74%) that are above the crossover point of the set of bifocal future firms. My analysis for the long future and for the near future has the same coverage (74%).

TABLE 5
Configurations of 2009-2017 Topic Updating Sufficient for 2018 Future Vocabularies

	Bifocal Future				**Not Bifocal Future**		
2009-2017	**1**	**2**	**3**	**4**		**1**	
Financial updating	●	⊗		⊗		⊗	
Social updating	⊗			●		⊗	
Proximal updating		●	●			•	
Distal updating			●	●		⊗	
Raw Coverage	.48	.54	.67	.45		.38	
Unique Coverage	.05	.03	.08	.01		.38	
Consistency	.86	.80	.79	.87		.83	
Number of Cases	16	20	20	8		2	
Overall Solution Consistency	.73					.83	
Overall Solution Coverage	.79					.38	

	Long Future				**Not Long Future**		
2009-2017	**1**	**2**	**3**	**4**	**1**	**2**	
Financial updating	●	⊗		⊗	•	⊗	
Social updating	⊗			●	⊗	⊗	
Proximal updating		●	●		⊗	•	
Distal updating			●	●	⊗	⊗	
Raw Coverage	.47	.55	.68	.46	.34	.40	
Unique Coverage	.06	.03	.09	.01	.04	.10	
Consistency	.86	.81	.81	.91	.81	.84	
Number of Cases	16	20	20	8	1	2	
Overall Solution Consistency	.80				.81		
Overall Solution Coverage	.75				.44		

TABLE 5 (Continued)

	Near Future					Not Near Future	
2009-2017	**1**	**2**	**3**	**4**		**1**	
Financial updating	●	⊗		⊗		⊗	
Social updating	⊗			●		⊗	
Proximal updating		●	●			•	
Distal updating			●	●		⊗	
Raw Coverage	.47	.55	.67	.46		.38	
Unique Coverage	.04	.03	.08	.01		.38	
Consistency	.84	.80	.79	.89		.81	
Number of Cases	16	20	20	8		2	
Overall Solution Consistency	.73					.81	
Overall Solution Coverage	.78					.38	

I duplicated the sufficiency analysis using the short future and respectively the long future instead of my derived dependent variable, bifocal future. The same recipes emerged for all three operationalizations futures, confirming that these recipes construct all three futures at once. My contingency analyses are reported in Table 6.

TABLE 6
Configurations of 2009-2017 Topic Updating Sufficient for 2018 Bifocal Future: Sectoral Self-Categorization and Analytic Style as Contingencies

	Solution Including Sectoral Self-categorizing						Solution Including Analytic Style				
2009-2017	**1a**	**1b**	**2a**	**2b**	**3**	**4**	**1a**	**1b**	**2a**	**2b**	**3**
Financial updating	●	●	⊗	⊗	•	⊗	●	●	⊗	⊗	
Social updating	⊗	⊗	•			●	⊗	⊗	⊗	•	
Proximal updating			●	●	●				●	●	●
Distal updating	•				●	●	•				●
Self-categorizing		○		○		⊗					
Analytic style								○	⊗	○	
Raw Coverage	.43	.35	.38	.42	.56	.09	.43	.40	.27	.44	.67
Unique Coverage	.01	.04	.01	.09	.08	.01	.02	.02	0	.02	.13
Consistency	.87	.87	.79	.80	.86	.83	.87	.88	.86	.93	.79
Number of Cases	9	11	9	18	12	1	9	5	3	4	20
Overall Solution Consistency	.75						.75				
Overall Solution Coverage	.78						.75				

I report the intermediate solution provided from the fsQCA software in the configuration tables (Dwivedi et al., 2018; Misangyi & Acharya, 2014). The presence and absence of explanatory conditions for the configurations are denoted as follows: I denote central conditions by ● (present) and ⊗ (absent) while contributing conditions are denoted by ● (present) and ⊗ (absent). Contributing conditions are obtained from counterfactual analysis. A combination of core conditions is theoretically more important. In line with previous work (Fiss, 2011; Misangyi et al., 2017), I differentiated these conditions for transparency reasons, but interpretations of central conditions and contributing conditions are theoretically equivalent.

Overall, I found four recipes that firms use to construe and construct the future. Each recipe indicates a unique way in which firms combined their responsibilities with chronotopes. The qualification of financial and social responsibilities with proximal and distal chronotopes began right after the Financial Crisis and persisted over the nine years following for all 86 firms in my sample. However, firms interconnect the same four topics in four distinct ways: numericalize, prioritize, anthropocenize, and communalize.

Numericalize (financial * ~social). The first configuration of Table 5 obtains when a firm updates its financial language while maintaining its social responsibilities. In this configuration, firms linguistically engage with financialization and rely heavily on numeric values. A total of 16 firms (25% of the 64 cases proficient at future language) employ this recipe to envisage and construct the bifocal future.

I performed a more in-depth qualitative analysis to understand how a firm numerically approaches the future in its language by adjusting emphasis on financial responsibilities. I selected one case (Goldman Sachs), which is representative of the firms

following this recipe and carefully investigated its use of word combinations in 2013, 2015 and 2017. Summarized illustrations are reported in Table 7. In all CSR reports, Goldman Sachs evaluated its achievements and delineated goals using numbers and the word ‘capital’. For example, in the 2015 report, Goldman Sachs writes:

> *“proud of the role we’ve played in helping to drive clean energy — by harnessing innovative financial structures that expand the investor base and bring greater capital efficiency, convening the best thought leaders, bringing diverse stakeholders together, and committing our capital and expertise to companies across the clean tech spectrum.” (p. 3)*

In this quote, Goldman Sachs frequently uses words about its financial structures or capital efficiency about plans of stakeholder management and clean energy innovation.

TABLE 7
Varieties of Long-term Capitalism: Illustrations of Sufficient Configurations

	Numerical-ize		**Priorit-ize**		**Anthropocen-ize**		**Communal-ize**		
	Financial * ˜Social		***˜Financial * Proximal***		***Proximal * Distal***		***˜Financial * Social * Distal***		
	financi, **million, asset, net, income,** oper, manag**, valu, cost,** *(gtaa),* risk, **capit, interest,** year, **cash, decemb**	**communiti,** busi, program, **help, custom, corpor, financi, support, employe,** compani, **respons, provid, service, divers,** work	financi, **million, asset, net, income,** oper, manag**, valu, cost,** *(gtaa),* risk, **capit, interest,** year, **cash, decemb**	**product,** sustain, *(dow),* **compani, energy, water,** global, **use, safety, goal,** develop, *(chemic),* **site, reduc, improve,** oper, year	**product,** sustain, *(dow),* **compani, energy, water,** global, **use, safety, goal,** develop, *(chemic),* **site, reduc, improve,** oper, year	**invest,** global, *(citi),* develop, **environment,** sustain, **social,** manag, financi, **client, project,** risk, work, **esg, new, csr**	financi, **million, asset, net, income,** oper, manag**, valu, cost,** *(gtaa),* risk, **capit, interest,** year, **cash, decemb**	**communiti,** busi, program, **help, custom, corpor, financi, support, employe,** compani, **respons, provid, service, divers,** work	**invest,** global, *(citi),* develop, **environment,** sustain, **social,** manag, finance, **client, project,** risk, work, **esg, new, csr**
	Goldman Sachs		***Prudential***		***Morgan Stanley***		***Vancity***		
2013	"committing our people, **capit**al and ideas to develop *market solutions to address environmental challenges* […] • Targeting $40 **billion** in financing and co-investment in clean tech over the next decade • Deployed nearly $14 **billion** in capital toward that goal over the past two years. • Invested over $10 **million** through partnerships to further market-based solutions to environmental challenges" (p. 1)		"cultivating financial prosperity and peace of mind requires a balanced, steadfast commitment to long-term vitality and value creation […] **products** that help clients grow and protect their assets, eliminating barriers to financial and social mobility, Engaging with financially underserved populations […] every employee will seek to create sustainable value" (p. 11)		"we are continually seeking new opportunities for our **client**'s capital to achieve financial returns alongside **social** and **environment**al benefits […] pathway to a global economy that safeguards scarce resources and **invest**s wisely for the future […] continue *to seize the opportunities and imperatives* for sustainability" (MS, p. 4/92) "investing in renewable **energy**, **energy** efficiency and other climate-friendly **project**s […]climate-friendly **project**s […]		"Vancity is committed to transforming how banking is done so we can help our members and their local **communiti**es thrive financially, **social**ly and **environmental**ly (p. 2) "we're working collaboratively to build healthy **communiti**es and enhance people's well-being (p. 4) "One way we connected more directly with you and your **communiti**es was through our new **Communit**y Advisory Committees. The advisory committees give us insight into how we can address needs that aren't being met […] guide how and where we invest in		

			projects that address climate change [… renewable energy] *ripe for scalable impact*" (p. 28)	**communiti**es, and to welcome younger members who can re**new** our membership base. These are the people who may become the future leaders of organizations working to create positive change" (p..5) "*beyond a focus on short-term profits to long-term value for members and* **communiti**es", p. 7)
2015	"proud of the role we've played in helping to drive clean energy — by harnessing innovative financi**a**l structures that expand the investor base and bring greater **capit**al efficiency, convening the best thought leaders, bringing diverse stakeholders together, and committing our **capit**al and expertise to companies across the clean tech spectrum […] Last year, we announced an expanded target of $150 **billion** by 2025, so that we continue to play a catalytic role in *the transition to a more sustainable, low-carbon future*" (p. 3)	*"long-term performance"* (p. 5) "creating sustainable outcomes for people, communities, and organizations" (p. 15) "diversity & inclusion (D&I) are embedded into every aspect of the **compan**y" (p. 22) "an expansive view of what supports its sustainable long-term value. By fostering purposeful relationships with a wide range of stakeholders, the **compan**y operates more effectively, recognizes emerging social issues and participates in the community as a responsible citizen (p. 29)	"*four core values* — Putting **Client**s First, Doing the Right Thing, Leading with Exceptional Ideas and Giving Back" (p. 2) "Sustainability is *embedded across our business in*: What We Do, How We Operate and Who We Are (p. 6) "Through transparent governance and rigorous risk management policies, controls and training, we meet our **client**s' needs, deliver value for our **invest**ors and contribute to a sound and sustainable financial system" (p. 13)	"efforts to build healthy **communiti**es that are economically, **social**ly and **environmental**ly sustainable […] make more of a difference in the **communiti**es we serve in the future" (p. 2) "Almost half of our business loans have a direct positive impact on the **communit**y and each year we return 30 per cent of our net income to our members and **communit**y partners in our annual Shared Success payout" (p. 4) "At Vancity, loans to organizations that we believe create positive impact in the **communit**y are called **communit**y impact loans" (p. 5) "*We're carbon neutral and a living wage* ***employe****r*" (p. 8) "Just under half the members surveyed strongly agreed that Vancity's contribution to the **communit**y has a positive effect on their well-being" p. 12)
2017	"running our firm sustainably is good **busi**ness, and it's a key ingredient to us delivering long-term **valu**e to our shareholders […] Our ability to succeed in the years to come will depend on seeing clearly today's challenges to	*the "wellness effect"* […] uniquely positioned to create pathways to prosperity for people around the world" (p.5) "defines sustainability as how the company anticipates and manages future risks and opportunities to meet its long-	"**work** to benefit all of society […] (**ESG**) factors in our business activities and mobilizing capital to deliver sustainable growth and long-term value, we help our **client**s build a sustainable future […] deliver	[strengthening **communit**y] **"***commitment to* ***communit****y well-being and* ***social*** *justice*" (p. 8) "an increase in the power of **communit**y within and across borders, which has the potential to act as a catalyst for driving change" (p. 9) "ensure those new products and

	sustainable growth and addressing them" (p. 1) "Sole arranger of […] dual-tenor green project bond […]. The innovative tenor mechanism **provid**ed options to maximize the **valu**e of the investment while preserving long-term financing support […] unlocked **capital** flow for developers while **provid**ing sustainable *long-term yield* to institutional investors. (p. 12)	term promises […] four building blocks for continued vitality [long-termism, risk management, responsible investment, **product** innovation]" (p. 9)	competitive financial returns while driving positive **environment**al and **social** impact. (p. 1) "our pursuit to scale sustainability is to drive private capital into impact **invest**ments. (p. 2) "a global leader in [global green bond issuance], which supports the transition to a low-carbon economy. In 2017, we led green and **social** sustainability bond transactions" p. 12) "*lasting change for the better*" (p. 16)	services enhance the unique contributions Vancity already makes to the **communit**y […] design things with member needs front and centre and in a way that allows us to grow our positive impact in the **communit**y" (p. 16) **"invest** in companies that provide both **social** and **environmental** returns as well as economic ones – green buildings and affordable housing are the two most obvious options. We'll begin with institutional **invest**ors, with a goal of expanding our offerings to individual **invest**ors in the future (p. 20)

The numericalize pathway for proficiency in future language is present regardless of whether a firm consistently categorized itself in the same sector as it did in 2009 or whether a firm adopted an analytical style.

Prioritize (~financial * proximal). The second configuration for proficiency in future language is observed when a firm modifies proximal chronotopes while downplaying its financial responsibilities. This second pathway presents when firms could leverage proximal chronotopes, which are generally used to articulate an immediate term. Although proximal chronotopes are used to construe the near term, their usage can be stretched out even further when financial responsibilities are stably set. In total, 20 firms (about 31% of the entire cases) adopt this recipe to construct the future.

My qualitative analysis on cases of this configuration provided me with deeper insights. As I did for the first configuration, I picked one representative case (Prudential) and went through the firm's reports for 2013, 2015 and 2017. All quotes are illustrated in Table 7. My analysis suggests that firms taking this pathway were concerned about their vitality and attempted to embrace concerns by restructuring organizational policy and operational functions. For example, the 2013 report of Prudential exhibited that

> *"cultivating financial prosperity and peace of mind requires a balanced, steadfast commitment to long-term vitality and value creation […]* ***products*** *that help clients grow and protect their assets, eliminating barriers to financial and social mobility, Engaging with financially underserved populations […] every employee will seek to create* ***sustain****able* ***valu****e." (p. 11)*
>
> *"On a functional level, Prudential's ongoing vitality is integrated through the enterprise as the responsibility of every employee." (p. 14)*

Prudential wrote about the structure of its organization to enhance sustainability commitment and integrated firm-level and employee-level responsibilities while moving forward.

The contingency analyses suggest that while the prioritize recipe is not contingent on a firm's self-categorization over time, firms that do not use an analytical style in reporting, particularly lower their voice on updating social responsibilities and firms using an analytical style socialize their language more in their reporting.

Anthropocenize (proximal*distal). The third configuration for successfully learning future language is a combination of proximal chronotopes and distal chronotopes. The juxtaposition of different chronotopes, regardless of the sociomaterial, geographical distance, supports the expectation that chronotopes construct the future in combination rather than in isolation. About 31% of the 64 cases follow the third pathway.

My qualitative analysis of this configuration affords a deeper insight. Morgan Stanley is one of the cases that follows the third recipe. The summary is presented in Table 7. In its reports in 2013, 2015, and 2017, Morgan Stanley wrote about the future by highlighting how the firm established an environmental, social, and governance system not just for its clients but also for society at large. The firm expressed a broad concern on climate-friendly projects, social transaction policies, and transparent governance principles, globally. For example, Morgan Stanley expressed in the 2013 report:

> *"we are continually seeking new opportunities for our **client**'s capital to achieve financial returns alongside **social** and **environment**al benefits […] pathway to a **global** economy that safeguards scarce resources and **invest**s wisely for the future […] continue to seize the opportunities and imperatives for **sustain**ability" (p. 4)*

*"investing in renewable **energy**, **energy** efficiency and other climate-friendly **project**s […]climate-friendly **project**s […] **project**s that address climate change […renewable energy] ripe for scalable impact." (p. 28)*

Morgan Stanley uses a combination of words such as 'social', 'environmental', 'sustainability', 'global', 'project' and 'invest'. In the narrative altogether, these words manifest a larger landscape that encompasses a variety of issues of CSR.

Communalize (~financial* social*distal). The fourth recipe that leads to a firm's being proficient in future language is updating social responsibilities and distal chronotopes while maintaining financial responsibilities. Firms that take this pathway tend to engage with social responsibilities and seek to construe the distant future while reducing the emphasis placed on financialization. A total 16 firms (25 % of all 64 cases) use the communalize pathway, sufficient for firms' proficiency in future language.

Like my work on the first three recipes, one case (Vancity) is selected for deeper qualitative analyses. I provide all illustrations in Table 7. In the 2013, 2015, and 2017 reports, Vancity illustrates its future plans by highlighting community and human-related projects. For example, in its 2017 report Vancity conveys its goals:

*[strengthening **communit**y] **"**commitment to **communit**y well-being and **social** justice." (p. 8)*

*"an increase in the power of **communit**y within and across borders, which has the potential to act as a catalyst for driving change." (p. 9)*

*"ensure those new products and services enhance the unique contributions Vancity already makes to the **communit**y […] design things with member needs*

> *front and centre and in a way that allows us to grow our positive impact in the* ***communit****y." (p. 16)*
>
> ***"invest*** *in companies that provide both* ***social*** *and* ***environmental*** *returns as well as economic ones – green buildings and affordable housing are the two most obvious options. We'll begin with institutional* ***invest****ors, with a goal of expanding our offerings to individual* ***invest****ors in the future." (p. 20)*

I observed many word combinations of 'community', 'service', or 'employees', most of which are human-centric and concerned with social issues. The qualitative analyses suggest that Vancity underscored how the firm should help deal with community issues and further integrate these ideas into the core of its business operations.

Contingency analyses additionally suggest that this pathway appears only when a firm does not self-position in the same sector over time. Because the configuration communalize is human-centered, which implies stakeholder-oriented, when it is not clearly involved in one sector or environment, the firm is likely to attempt to legitimize its constructing of future relevant to diverse stakeholders.

Supplemental Analysis 1: Firms that do not Successfully Transform their Temporality (Not Bifocal). I analyzed if there are any configurations of the explanatory conditions, sufficient for a firm's being *not proficient* in future language. I found one configuration for not being bifocal that keeps financial and social responsibilities as well as distal chronotopes stabilized while updating proximal chronotopes. When a firm merely focused on modifying proximal chronotopes, it failed to convey the future language and construct the bifocal future. This configuration was observed in only two cases.

I replicated these analyses for non-derivative operationalizations of my dependent variable as either near or long-term future. The results similarly showed that shifting the proximal chronotopes only while maintaining the emphasis placed on other topics predicted both the near and the long future. The analysis similarly revealed that changing the financial responsibility only predicted difficulties of constructing the future. I concluded that firms did not construct the future (bifocal, near, or long) when they focused on changing only one topic (proximal chronotopes or financial responsibilities) while maintaining the others constant.

Supplemental Analysis 2: Configurations Sufficient for Financial Firms' Bifocality. I further examined if the recipes by which firms construed their future as bifocal (i.e., both short and long term) may differ for firms in the financial sector from those in other sectors. Firms in the financial sector are more likely to be sensitive to the short-term return due to high pressure from customers and shareholders. I thus divided the sample into two groups. Of 86 firms in the final sample, 34 (40%) firms are financial firms, and the remaining 52 (60%) firms are non-financial firms.

The results of the sufficiency analyses are shown in Table 8. The overall configurations are similar for both groups, but some recipes underscore important details that differ between these two subsamples.

For financial firms, the first recipe (numericalize) combines financial and social updating with growing emphasis on distal chronotopes to qualify their responsibilities as future-forward. These changes in the distal chronotopes underscore that they envision a longer future. The second configuration (prioritize) is predicated on the stability of a firm's social responsibilities: financial firms that follow this recipe maintain (do not

change) their responsibilities. They focus on underscoring the impacts in the here-and-now by updating the proximal chronotopes. The third configuration (anthropocenize) remains unchanged for both samples, further reinforcing the insight that firms can construct bifocal futures by simply balancing the short and long term, irrespective of whether their responsibilities change or remain the same. Almost half of the financial firms took this solution. For financial firms, the last configuration (communalize) includes updates of social responsibilities qualified by updates of proximal, rather than distal, chronotopes, while maintaining the emphasis on financial responsibilities relatively unchanged.

TABLE 8
Configurations of 2009-2017 Topic Updating Sufficient for 2018 Bifocal Future: Financial vs. Non-financial Firms

	Financial Firms				**Non-financial Firms**			
2009-2017	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Financial updating	●	⊗		⊗	●	⊗		⊗
Social updating	⊗	⊗		●	⊗	⊗		●
Proximal updating		●	●	●		●	●	
Distal updating	●		●		⊗		●	●
Raw Coverage	.51	.51	.72	.52	.36	.46	.64	.41
Unique Coverage	.03	.02	.11	.01	.02	.04	.16	0
Consistency	.80	.85	.75	.85	.93	.93	.82	.88
Number of Cases	6	3	16	6	2	4	11	2
Overall Solution Consistency	.73					.78		
Overall Solution Coverage	.81					.72		

I found similar patterns of configurations for non-financial firms. Their first configuration (numericalize) also used distal chronotopes to qualify their responsibilities; however, firms only changed their financial responsibilities, simply maintaining their emphasis on social responsibilities. Notably, this first configurations maintained, rather

than changed, their emphasis on distal chronotopes over time. I can interpret this in two ways: either non-financial firms began with sufficiently long views of their futures or they lagged financial firms in lengthening their futures. In both subsamples, the numericalize solution converts and conveys changes through numerical emphases. Qualitative follow-ups of representative cases confirm that firms adopting the numericalize solution use numbers to not only represent both the short and long term but also interconnect the two. The bifocality of the future hinges on the numbers for both subsamples, but these numbers bear more frequent distal qualifiers for financial firms. The second recipe (prioritize) is identical for financial and non-financial firms. For non-financial firms, the third solution (anthropocenize) and the fourth solution (communalize) fully replicated as solutions of the full sample.

The robustness of the four recipes across these two subsamples suggest that when subtle, granular changes in language repeat over time, they can imbue the future with distinct meanings.

Contingencies. I further explored whether any additional conditions influence the four recipes by considering two conditions: firms' self-categorizing and analytical writing style. Of the four recipes, three remained robust when I included contingency conditions. Self-categorization did, however, modify the communalize recipe. The communalize recipe held only when firms did not self-categorize to a single sector. Straddling multiple sectors could plausibly sensitize firms to multiple issues and audiences. The communalize recipe is more suited to ecosystem or system-changing ambitions and more often observed when firms work at a community rather than an industry level of analysis.

Reliance on an analytical reporting study is particularly relevant to the prioritize recipe. Specifically, when firms did not use a formal style of language, the prioritize recipe included the stabilization of social responsibilities. When firms adopted a formal style, the same recipe included the acceleration of social responsibilities.

3.5 Discussion

My research explains the evidence-based case for long-term capitalism by offering a linguistic explanation of the emergence and equilibrium between short- and long-term futures after the Financial Crisis. I find robust evidence that firms attend to both short- and long-term futures and introduce the concept of bifocal future. Although the majority of the firms in my sample pursued a bifocal future, with notable similarities and only few differences between financial and non-financial firms, the future was lengthened in different ways, each imbuing the bifocal future with a very different meaning.

The notion of bifocality follows, and also adds new insights to, prior discussions on how firms balance the short and the long term, for example, through cyclicality (Slawinski & Bansal, 2012), ambitemporality (Reinecke & Ansari, 2015) and temporal work (Kaplan & Orlikowski, 2013). The inseparability of the short and long term in my theoretical definition of bifocality, itself robust to numerous operationalizations, suggests that firms attend to both. Although the future lengthens significantly over time, it does not forego the emphasis on the short term. Similar to Bluedorn's observation of similar depth in the past and the future (Bluedorn & Ferris, 2004), the notion of bifocality suggests that the future is dually construed so that increases in the linguistic emphasis on long-term words is counter-balanced by increases in the linguistic emphasis on short-term

words. Put differently, when firms construct their futures through language, they begin, rather than merely end, with temporal equilibrium. Short-term language becomes more rather than less prevalent in annual reports when firms emphasize long-termism.

As long-term capitalism becomes acclaimed by different audiences (Darr & Koller, 2017; Flammer & Bansal, 2017), my study suggests that firms remain highly sensitive and linguistically proactive in simultaneously servicing the expectations of short-termism. My linguistic approach does not capture the effortful changes in either the near or the long term that others noted, nor can it clarify whether firms achieve it by cycling (Slawinski & Bansal, 2012), negotiating (Reinecke & Ansari, 2015) or translating (Augustine et al., 2019; Feuls et al., 2021). However, I suggest that the bifocal futures firms in my sample construe over time acquire different meanings depending on how firms update their language; seemingly subtle differences in assemblages of words can dramatically differentiate between their bifocal futures.

3.5.1 Contributions

My core contribution to the literature on time and sustainability is thus not the realization that the future becomes increasingly bifocal over time, but rather that the meaning of this bifocal future emerges through and remains sensitive to the words firms use to describe their actions to different audiences. The interpretations of my fsQCA recipes receive intuitive support when I delve into other forms of communication and other modalities of linguistic analysis (frames, narratives, work). With the benefit of this insight, I believe the vocabularies I had extracted for responsibilities (financial and social) and chronotopes (distal and proximal) as well as the recipes induced (numericalize, prioritize, anthropocenize, and communalize) can meaningfully be applied

to different types of reports because I am interested in the meaning, not just the length, of firms' futures. Conversely, as I encounter emerging clusters of meaning, such as climate-change action, net zero, and so forth, the exploratory methodology can reveal key words and robust word assemblages that differentiate these new long-term futures from others. I believe that a mid-range theory of CSR that takes a granular view of language can bring us closer to the emergence of meaning, even if it remains silent of the broader set of processes, practices, and structures that organizations follow en route.

In addition, this study contributes to the literature on decoupling of CSR (Crilly, Zollo, & Hansen, 2012). In the history of CSR, scholars have elucidated multiple forms of green washing and brown washing and also different patterns of decoupling. Decoupling occurs as firms go through changes along with social demands and expectations (Bromley & Powell, 2012). My findings add a linguistic mechanism to the decoupling literature by showing how firm changes occur in vocabularies of a firm in the way the firm talks about time and space. The four recipes that I reveal are fundamental ways in which firms address changes in the environment. Language affords different ingredients that firms use to align their commitment with society, which is a new, constructive type of decoupling that allows the firms to move from the past to the future.

This essay also makes a methodological contribution. The combination of two empirical techniques helped gain granular insight into the role of language over time. Configural analyses confirm the robustness of a bifocal future across firms but counterbalance it with understanding of its various meanings, clarifying how they emerged through language.

My study also informs practice, especially among publicly-traded firms that are committed to sustainability. I point to the linguistic choices these firms make in their reports as indicative of the meaning, not just the length, of their bifocal future. Although topic modeling extracted 12 topics that firms use to report CSR achievements and goals, only a third (four) fluctuated over the decade following the Crisis and played an active part in how firms balanced short- and long-termism. The precision of the components and the versatility of the combinations support my original premise of language as constitutive.

My findings also offer pragmatic support to the theoretical argument that language orients attention (Ocasio et al., 2017). Within my sample of firms that already engage in sustainability reporting on a frequent basis, small changes in language accumulate over time. These changes can have multiple causes, including shifts in internal goals and priorities. I cannot rule out a bidirectional relationship whereby changes in attention structure drive language while language drives attention. I also cannot generalize my findings to non-publicly-traded firms, which attend to different issues and audiences, or to firms that are not yet formally reporting on sustainability. However, my approach suggests that new clusters of activities and new types of projects can acquire their future meaning through the early but repeated choices of words firms use to represent their actions to key audiences.

My exploration relies on, and reveals, the importance of repetition in linguistic mechanisms. Unlike the coarser mechanisms (frames, discourses), which have been examined over much stronger strategic episodes or at a much narrowed scope (e.g., letters, presentations), words can be traced over long periods of time. Mid-range theories

can retrospectively unveil sources and causes of meanings that today I take for granted. They can also prospectively discover brand new meanings as they emerge.

3.6 Conclusion

This study induces a mid-range theory of language-based CSR by showing how the recurrence of the same key words in different combinations in the sustainability reports of publicly-traded firms lengthens their temporal focus, balancing the short and the long term. Firms use words to update their responsibilities (financial and social) and to qualify their foci in time and space by adding chronotopes (proximal or distal). How firms shift emphasis among responsibilities and chronotopes imbues their future with different meanings. I induce and illustrate four recipes by which firms use language to redefine their futures: (1) numericalize, (2) prioritize, (3) anthropocenize, and (4) communalize their future. Any of the four recipes pave the way to the same bifocal future by helping firms increase the emphasis on both the short and the long term at the same time. Three of the four configurations reallocate attention among different responsibilities. One reallocates attention only among temporal construals. Taken together, this study shows that even among frequent reporters committed to sustainability, the length and meaning of the future are not given, but rather made. I unpack how these meanings emerge in language and offer theoretical arguments and methodological approaches for tracing similar shifts through granular analysis of word assemblages.

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3.8 Appendix

Appendix 1
Goldman Sachs' CSR reporting by topic, 2009-2017

	Financial	Social	Proximal	Distal
	financi, **million, asset, net, income,** oper, manag**, valu, cost,** *(gtaa)*, risk, **capit, interest,** year, **cash, decemb**	**community,** busi, program, **help, custom, corpor, financi, support, employe,** compani, **respons, provid, service, divers,** work	**product,** sustain, *(dow)*, **compani, energy, water,** global, **use, safety, goal,** develop, *(chemic)*, **site, reduc, improve,** oper, year	**invest,** global, *(citi)*, develop, **environment,** sustain, **social,** manag, finance, **client, project,** risk, work, **esg, new, csr**
2009	Goldman Sachs pioneered the GS SUSTAIN Focus List, which investors can utilize to consider the global forces, including climate change, increased competition for resources and the emergence of a new middle class that are shaping today's investing world. Institutional and individual investors have access to these companies through the GS Sustain Portfolio and other vehicles managed by GSAM in collaboration with Global Investment Research. The strategy had $295 **million** in managed **assets** as of **December** 31, 2009. GSAM's US Responsible Equity strategy aims to generate excess returns versus the S&P 500 while investing in companies engaged in responsible activities across	Since 2006, **employee**-led environmental networks have been operating in cities worldwide. These groups have conducted successful employee awareness campaigns on recycling, composting, double-sided printing, and mug and water bottle reuse, which have enabled us to achieve significant levels of **employee support** and improved our performance in each of these areas. To further build **employee** engagement in reducing our operational impacts, we created a quarterly environmental newsletter that **provides** updates on the firm's environmental efforts. (p.22)	We are committed to increasing our **use** of recycled and environmentally certified wood, paper and print **products**, using **energy-**efficient equipment and purchasing more organic and sustainably harvested **products** and supplies. Where appropriate, environmental performance criteria are integrated into our vendor contracts in support of this commitment. The ability to partner with us to provide sustainable **products** and services is an important consideration in selecting vendors. Co-developing commercially advantageous sustainable business solutions with our vendors has enabled us to both **improve** our own environmental performance and positively influence the environmental and social practices of the vendors in our global network. (p.20)	We ask our financing and principal **investing** teams to conduct an **environ mental, social and governance (ESG)** review for opportunities in the normal course of their due diligence before committing to business on behalf of the fi rm. As appropriate, advisory, trading and asset management teams also conduct **ESG** reviews. […] When we identify a potentially significant issue – including governance, the **environment,** labor or human rights – we prefer to address the potential issue and encourage the **client** to assume more sustainable practices. By doing so, we differentiate our advice and serve the interests of our **clients** by helping them improve their **environmental**, **social** and governance practices. We believe this approach upholds our responsibility, advances the

	the three categories: environmental, social and governance (ESG). […] The team leverages its access to company management teams to influence high ESG standards. As of **December** 31, 2009, the US Responsible Equity portfolio had $86 **million** in managed **assets.** (p.10)			**client**'s understanding and practice of sustainable actions, effectively manages risk and yields greater benefits both for the **client** and broader **soci**ety. (p.6)
2010	We perform a broad range of advisory, financing and market-making services to help clients invest and raise funds, transact in various types of financial products and manage risk to protect their assets. In our roles as advisor and financier, we enable companies to raise **capit**al to strengthen and grow businesses. As market maker and risk manager**,** we primarily help institutions that are professional market participants (including governments, corporations and investing institutions) buy and sell financial instruments to realize their investment objectives. As **asset** manager, we help companies, pension funds, mutual funds, individual investors and others. (p.6)	Goldman Sachs fosters an inclusive culture that values the widest range possible of backgrounds and perspectives. We recruit students and experienced hires from **diverse communiti**es through a broad array of programs and encourage awareness and accountability at all levels of the organization. We train our people about cross-cultural issues and **support** internal networks that **provide** platforms to develop professional relationships. To ensure that our **divers**ity focus permeates the entire firm, all of our **employe**es are required to complete at least two hours of **divers**ity-related training each year. We also integrate this training into our orientation programs for new hires and offer more than three dozen **Diversity** & Inclusion training programs that	In recent years, our business has evolved and become more complex. We recognize that this complexity gives rise to the potential for conflicts of interest and requires a robust suitability process. As a result, this requires ongoing diligence to ensure client and **product** suitability. It also means we must always be clear to ourselves and to our clients about the capacity in which we are acting […]. (p.7) In 2010, we managed initial public offerings and other financing transactions that raised $8.9 billion for clients engaged in clean technologies and renewable **energy**. We co-invested $388 million in expanding renewable **energy** and green affordable housing initiatives. (p.26)	Goldman Sachs supports public policy that fosters global economic growth, promotes financial stability, and improves communities and **soci**ety. As such, we have a responsibility to understand the regulatory and political **environment**s in which we have a presence, and to advocate policies we believe advance and protect our stakeholders' interests and the broader marketplace. In this way, we seek to be a constructive voice in the global financial regulatory reform process and are working with regulators to strengthen the financial system and reduce systemic risk, while supporting dynamic capital markets, entrepreneurship and innovation. (p.9)

		are frequently cited for their scope and innovation. Our efforts to develop a **divers**e workforce have been recognized by a number of organizations, including Work**i**ng Mother and the Human Rights Campaign. (p.20)		
2011	The financi**n**g of the new Bronx center met both of those criteria. Our firm earns an economic return on our invested **capit**al via federal tax credit incentives and **cash** flow from the UHP's oper**a**tions. Importantly, we believe the project will have a meaningful social and economic impact on the Morrisania neighborhood of the South Bronx. […] (p.34)	Ultimately, we think about governance as the foundation of a well-run company, embodying principles and commitments that share fundamental aspirations: increasing value for shareholders, promoting valued **service** to clients, managing risks, and making lasting contributions to **communiti**es. Successful governance for our firm is a vibrant process that involves the **divers**ity of our busi**n**esses, the global nature of our operations, and the rapidly changing needs of our clients. We recognize that there is always room for improvement, given our goal to be a good steward for our stakeholders. (p.20)	We believe we can play a critical role in the vital transition to a low-carbon future by helping raise capital in the public and private markets and investing alongside our clients in clean technology sectors such as solar, wind, geothermal, **energy** efficiency, green transportation and advanced biofuels. The clean tech industry is expected to be a rapidly growing market and one that we believe is at a momentous point in terms of the expansion of technologies that will help diversify **energy** sources and **improve** the environment. (p.10)	Our commitment to helping finance commercial solutions to the world's growing energy needs traces back to the publication of our **Environmental** Policy Framework in November 2005. Since then and as of the end of 2011, we have finance**d** more than $24 billion and co-**invest**ed almost $4 billion of capital toward clean technology and **environmental**ly beneficial **project**s. These **invest**ments have helped emerging clean tech industries achieve the economies of scale that will help them become competitive. While we cannot predict with certainty how the clean technology market will grow and evolve over the next decade, we believe that our $40 billion goal is achievable. By financ**i**ng and **invest**ing in this growing market, we will both help serve the needs of our **client**s and

				contribute to solutions to a critical **environmental** challenge. (p.11)
2012	In 2012, we financed nearly $2 **billion** and co-invested more than $430 **million** in the sector. We served as financial advisor on clean energy transactions **valu**ed at more than $1.1 **billion**. Since 2006, we have financed more than $26 billion and co-invested more than $4.3 billion toward clean technology companies globally. In **Decemb**er 2012, we were the lead underwriter on SolarCity's initial public offering, helping to raise $106 **million**. The initial public offering was the first for a distributed solar generation company and the first renewable energy company initial public offering in six months. Earlier in the year, we provided **financi**ng to the company to help fund the purchase of inventory. […] (p.3)	Extreme weather, inadequate water infrastructure systems and growing demand have made water needs more acute. While increasingly constrained government funding has made meeting the infrastructure needs challenging, we are committed to **help**ing **communiti**es meet their capital needs to address these challenges. For example, last November, the firm **help**ed **finance** an innovative public-private partnership between the city of Rialto, Table Rock Capital, Union Labor Life Insurance Company and Veolia Water on a 30-year concession to manage Rialto's water and wastewater systems. […] Our Environmental Markets Group assists business teams by **provid**ing guidance on environmental matters, doing independent reviews as appropriate and identifying mitigants and positive engagement opportunities with clients to reduce risk. In 2012, 262 transactions were reviewed by the Environmental Markets Group and 526 new **employe**es received environmental, social and governance training. For	This year we **reduc**ed the carbon footprint from our offices by 19 percent — well exceeding our initial target to **reduc**e the footprint from our offices by seven percent from a 2005 baseline by 2012. We accomplished this entirely by deploying our global Carbon **Reduc**tion Framework, which challenges us to design, construct and operate our facilities and technology as efficiently as possible. Recognizing the impact of our data center emissions, in 2012 we went beyond our initial target by **reduc**ing the carbon footprint from both our offices and data centers by 10 percent from a 2005 baseline. We achieved this additional **reduc**tion with the purchase of a balanced mix of high-quality, credible Gold Standard and Voluntary Carbon Standard offsets that support the growth of renewable **energy** markets where we operate. We have committed to be carbon neutral across our facilities by 2020. (p.5)	Our GS SUSTAIN research team continues to expand its analysis of companies, further helping **client**s identify environmental, social and governance outperformers and structural leaders. In May 2012, GS **SUSTAIN** announced a major expansion of its analysis to nearly 1,400 mid-to-large-sized companies globally, following the collection and analysis of nearly 100,000 **ESG** data points from publicly available sources. From its inception in June 2007 through the end of 2012, the GS SUSTAIN Focus List has outperformed the MSCI All Country World Index (ACWI) global equity benchmark by more than 40 percent. (p.4)

		more information, please see our Business Selection and Environmental Advisory process. (p.4)		
2013	Increasing **interest** from investors has created opportunities for environmentally beneficial projects to raise **capit**al in the fixed **income** markets. Green Bonds are debt financi**ngs** in which proceeds are exclusively directed toward green purposes. In February 2014, we acted as joint book runner on Unibail-Rodamco's €750 **million** green bond issuance. Unibail-Rodamco is a pan-European commercial property operator, investor and developer. Proceeds will be used to finance the construction and development of new and existing eligible **asset**s, as certified by BREEAM, a leading global design and assessment method for sustainable buildings. This transaction marks the first green bond issued by a corporation in 2014 and the first ever for a real estate company in the Euro market. (p.5)	Extreme weather, aging water infrastructure systems and growing demand have made water needs more acute, while increasingly constrained government funding has made meeting the infrastructure needs more challenging. We seek to **help communiti**es meet their capital requirements to address these infrastructure needs through **financi**ng innovative solutions. In July 2013, Goldman Sachs acted as sole book runner in the issuance of $308 million of Lehigh County Authority Water and Sewer Revenue bonds (City of Allentown Concession). The bonds were issued to **finance** the upfront payment required to lease the water and sewer system from the City of Allentown, Pennsylvania, and pre-fund the system's five-year Capital Improvement **Program**. […] (p.4)	We continue to make progress toward our **goal** to be carbon neutral across our facilities by 2020. Our Carbon **Reduc**tion Framework challenges us to be innovative in the design, construction and operation of our facilities and technology to maximize efficiency. An example of such innovation is our recent public-private lighting collaboration with the U.S. Department of **Energy**, Lawrence Berkeley National Laboratory and Green Light New York to **improve energy** efficiency in our global headquarters. The Living Lab project consists of the retrofit of lighting, daylighting, shading and control systems on an occupied office floor, with the **goal** of analyzing and implementing new technologies that dramatically **reduc**e **energy use** and costs, and significantly **improve** the interior environment for the occupants. The technologies with the greatest potential for widespread replication will be considered for wider **use** throughout our global real estate portfolio and made available to the design,	Each of our business areas has an important role to play in implementing our commitments under the **Environmental** Policy Framework and contributing to **environmental** progress. For example, our **Invest**ment Banking and **Invest**ment and Lending businesses help provide capital and advice to advance **environmental**ly responsible **project**s and transactions. **Investment** Manag**e**ment incorporates an understanding of **environmental** impacts and capabilities into our efforts to manage and preserve the assets of our **client**s. Through our Global **Invest**ment Research Division, we integrate **environmental**, **social** and other relevant factors into our fundamental analysis of individual companies and industry sectors. (p.3)

			construction and real estate communities. (p.7)	
2014	Economic **capit**al is one of the most **valu**able **asset**s for improving lives and communities. We play an important role in facilitating transactions within the **capit**al markets, which help drive job creation, innovation and financial security. **Capit**al markets enable people to save for retirement, buy homes, finance education and grow businesses. They enable communities to get funding to provide necessary services. As a provider of financial **capit**al, we support promising businesses with the resources they need to grow. This could include offering a loan or making an equity investment. […] (p.31)	Goldman Sachs volunteers joined GRID Alternatives to install a nearly 3-kilowatt rooftop solar electric system for a family in New Jersey who was displaced from their home by Hurricane Sandy. The new solar system **provide**s energy cost savings and reduces the **communit**y's greenhouse gas emissions. GRID Alternatives has partnered with **Communit**y TeamWorks in California since 2013 and has expanded to the New York metropolitan area this year. Goldman Sachs' Center for Environmental Markets announced a partnership with GRID in 2014, to further **support** the organization's mission to make renewable energy technology and job training accessible to underserved **communiti**es. (p. 52)	A key role we play in the transition toward a low-carbon future is assisting clients to meet their capital needs in developing clean **energy** solutions. In 2012, we set a **goal** to finance and invest $40 billion in clean **energy** over the coming decade. Last year, we continued to make significant progress toward meeting our **goal** with nearly $13 billion in financing and co-investments. The increase in capital deployed is reflective of the clean **energy** market and the innovative financing structures that are helping to unlock greater capital and bring capital efficiency to the market. We also served as financial advisor on several significant clean **energy** mergers and acquisitions transactions. (p.45)	Established in 2001, the Urban **Invest**ment Group deploys a "double bottom line" strategy to **invest** the firm's capital to produce strong financial results, while also benefiting urban communities. Through public-private partnerships, UIG addresses capital needs in low- and moderate-income communities by creating and incubating innovative, sustainable **invest**ing models, including comprehensive community development structures, **social** impact bonds and a first-of-its-kind **Social** Impact Fund that both have positive **social** impact and produce strong financial results. […] These innovative financial products have begun to make a difference, not only for the **project**s that they finance, but also for the incentives that they create for strengthening communities in need of capital as well as thoughtful planning to address long-term neglect. (p.36)
2015	We do this in a number of ways. We provide strategic advice to companies to help them expand and improve their operations, enabling	**Respons**ibly managing our operational impact is a prerequisite of sound policy and a necessary complement to our core business activities. Our vision is	Environmental stewardship is not only about how we operate our business, but also about how we engage our people. Through	**ESG** and impact **invest**ing have not only become powerful tools for addressing big challenges, but also one of the fastest-

	them to add jobs and boost growth. We help local, state and national governments finance, build and improve schools, hospitals, roads and other essential infrastructure projects that raise local living standards. We connect investors with the projects and organizations that need **capit**al to achieve their aspirations. We offer investment advisory services to institutional clients and individual investors so they can reach their financial objectives. We also play a critical role in helping organizations manage their risk exposures, so they can operate their businesses for the long term. (p. 3)	to deliver the world's best workplace to the people of Goldman Sachs — a commitment that extends to anywhere we do business and to anyone our activities touch, including our guests, clients, **employee**s, vendors and local **communiti**es. Our definition of the "world's best workplace" includes a commitment to being sustainable and inclusive. (p. 11)	programs sponsored across our global businesses, we discuss environmental issues, raise awareness and harness the talents of our people. Throughout the year, we publish topic-specific content, such as videos, infographics and podcasts, both internally and externally, to educate our people and engage with our external stakeholders on the evolving environmental landscape and Goldman Sachs' approach to these matters. We also offer a speaker series called Talks@GS that brings thought leaders to the firm to share innovative ideas and perspectives on a variety of themes, including on renewable **energy**, conservation and **water**. (p. 12)	growing trends in financial services. It is a field that, in the United States and worldwide, we have helped to pioneer — as a financial innovator, leading **invest**or, and collaborator with other financial institutions. A good example is our work with a major New York pension fund in 2015 to develop a $2 billion strategy that reduces the carbon emissions intensity of the fund's portfolio in a risk-managed manner. Working with Goldman Sachs Asset Management, the strategy integrates companies that, in aggregate, have greenhouse gas emissions up to 70 percent lower than those of the fund's US large-cap equity benchmark. (p. 8)
2016	A prime example, introduced in 2016, is Marcus by Goldman Sachs™, an online lending platform that helps people better manage high-**interest** credit card debt. Marcus was created with the input of thousands of consumers, who shared experiences about the moments in life that create debt and the challenges of managing it. […] Client feedback also drove the development of our key	10,000 Small Businesses, for example, **help**s to empower entrepreneurs who are critical to driving innovation, dynamism and job growth in the economy. This Goldman Sachs program, which **provid**es access to education, capital and business **support service**s, has reached more than 7,300 small business owners across the U.S. and U.K. through the end of 2016. Working with a network of more than 100 local and national partners, we have deployed nearly $150 million in	We have made significant progress on the environmental commitments set out in our updated 2015 Environmental Policy Framework. We have achieved carbon neutrality for our global operations and business travel through a mix of certified renewable **energy** credits and carbon offsets. In 2016, we procured certified renewable **energy** credits equivalent to 90 percent of our global electricity consumption, and we aim to procure 100 percent renewable	At Goldman Sachs, the growth of **ESG invest**ing has been significant, and it has accelerated since the acquisition of Imprint Capital, a leading **ESG** advisor, in 2015. We have seen a virtuous cycle in which demand has driven product and service innovation, creating **new** models for success and driving further demand. As a result, our assets under supervision in dedicated **ESG** strategies have grown significantly, to $6.5 billion by the end of 2016.

	Marquee app SIMON, a turnkey solution for financial advisors that makes it easier to understand, analyze and customize structured investments. SIMON pairs best in-class educational content with a robust suite of Web-based analytics to help advisors inform their clients, introduce structured investments as part of the clients' portfolios and customize risk management solutions to meet specific client needs. By enabling our competitors to offer products on the platform, we ensure our clients have access to the best, most **cost**-effective product — even if it is not from us […]. (p.7)	loans and **provid**ed important networking opportunities, all while enhancing business skills. 10,000 Small Businesses program graduates consistently increase revenues and create new jobs at rates that outperform the broader economy. (p.8)	power to meet our global electricity needs by 2020. We plan to achieve this **goal** by prioritizing the **use** of long-term power purchase agreements that facilitate the development of renewable **energy** resources, with the remainder through the procurement of certified renewable **energy** credits. (p.11)	Fundamental to this growth is an increased understanding that a disciplined approach to **ESG** **invest**ing can drive competitive risk-adjusted returns — just as with any other **invest**ment. Risk/return profiles of **ESG** portfolios now mirror the markets and span asset classes, fueling the evolution of impact **invest**ment strategies that meet conventional risk/return hurdles, but also include **social** and **environmental** impacts that are both intentional and measurable. (p. 5)
2017	As active managers of our equity investments, engagement with company boards and management teams gives us insights into management quality, business model, financial strategy and future business prospects — as our investment teams work closely with the companies to grow their shareholder **value** over the long term (p. 22)	We encourage our people to lend their unique skills to contribute to society […] through skills-based volunteering or service projects initiated by our employees to lend their expertise to a worthy organization. We target **service** opportunities where our people can make an outsized impact. This […] amplifies the impact we can have on the **communiti**es where we work and live (p. 24)	We maintain net carbon neutrality and deploy renewable energy for our operations, and we continue to make progress toward green building certifications, responsibly sourced **product**s, sustainable supply chain management and **reduc**ed **water** **use** and waste generation (p. 7)	We take an active approach to managing **ESG**-related risks […] to build thriving, sustainable economies and to facilitate the transition to a low carbon future (p. 6) fastest-growing areas of our Investment Management Division […] dedicated **ESG** and impact **invest**ing strategies and capabilities (p. 20) allows clients to […] to manage risk and long-term value, to pursuing measurable environmental and social impact (p. 21)

CHAPTER 4: IN GOOD TIMES AND BAD: INSTITUTIONAL INVESTORS EFFECTS ON CORPORATE LONG-TERMISM

4.1 Abstract

This study examines the role of institutional investors in reorienting firms' attention towards the long term in the aftermath of the 2008 Financial Crisis. Building upon the attention-based view, and specifically over arguments of attentional control by third parties, I hypothesize that institutional investors' decisions to stay or leave firms that struggled during the Financial Crisis increased the extent to which firms' attentional structures remained susceptible to their influence after. I specifically argue that institutional investors that chose to stay developed co-dependent attention structures; in accordance, the firms became hyper-vigilant to their subsequent decisions. I test this attention-based argument using a longitudinal panel data regression on publicly-traded firms in the U.S. for the period between 2010 and 2016. I find that when institutional investors stayed with the invested firm during the Crisis, they continued to exert control over firms' attention to the long term after the Crisis. This study elaborates on the role of third parties in reshaping firms' temporal structures by examining the sensitivity of their attention to the long term to institutional investors decisions to stay or leave during the Financial Crisis.

Keywords: attention-based view, attentional control, long-term orientation, crisis management, institutional ownership structure

4.2 Introduction

A firm's long-term orientation depends on its shareholders (Aguilera et al., 2021; Brown et al., 2006; Graves & Waddock, 1990, 1994; Johnson & Greening, 1999; Walls et al., 2012). Prior studies have focused on activist shareholders, revealing the consequences of their influence over critical decisions (Christensen & Van Bever, 2014; DesJardine & Durand, 2020; Goranova et al., 2017). Activist investors' actions are intended to elicit immediate responses from the targeted firm (e.g., leveraging capital to obtain strong voting rights on the board of directors and driving the board of directors to reallocate the firm's financial resources). Depending on their focus on either financial or non-financial performance, activist investors can either shorten, even shortchange, a firm's long-termism (DesJardine & Durand, 2020; Stout, 2012; Strine, 2014) or support it. Similar effects have been found for other third parties, such as movement activists (Odziemkowska & McDonnell, 2019; King & McDonnell, 2012) and policymakers (Robins, 2017).

Institutional investors hold significant influence over multiple aspects of a firm's strategy (David et al., 2001; Shi et al., 2020) and also shape a firm's corporate social responsibility (Walls, Berrone & Phan, 2012). However, many institutional investors are not engaging in activism either for or against firms' sustainability strategies. Large institutional investors hold substantial blocks of stocks, bonds, and other investment securities and therefore, share the fate of the firms, especially when other third parties challenge firms' decisions to become more profitable by shortening their attention structures to immediate financial performance (DesJardine & Durand, 2020) or lengthening their attention structures to incorporate emerging social demands

(Odziemkowska & McDonnell, 2019). Such large institutional investors are assumed to be patient (Chiu, 2011), unless a firm's (ir)responsibility threatens their own missions and returns (McDonnell & Werner, 2016).

I explore the role of large institutional investors on long-termism. Several studies provide evidence of the direct relationship between institutional investors' ownership and firms' long-term orientation during periods of stability (Brown et al., 2006; Dyck et al., 2019). I complement these findings by examining the evolving relationship between institutional owners and the owned firms during periods of change. Specifically, I explore whether their decisions to stay together during the 2008 Financial Crisis increased their leverage over firms' subsequent long-termism. Specifically, I hypothesize and test that a firm's attention to long-termism became more sensitive to institutional investors when they chose to stay during the Crisis. My findings contribute to elaborating the role of patient (non-activist) investors in shaping firms' temporal structures and broaden attention to how third parties may control firms' attention structures, especially when they share the same fate (Ocasio & Wohlgezogen, 2010).

In this paper, I focus on the role of large institutional investors who decided to either stay or leave the firms in which they invested during the 2008 Financial Crisis. The unanticipated, catastrophic disruptions of the Crisis undermined trust and confidence in the stable financial system (Lins et al., 2017). Regardless, many large institutional investors chose to share the fate of the firms. I examine how their decisions during the Crisis shaped firms' long-termism for the following seven years, from 2010 to 2016. To preface my empirical findings, I provide evidence that firms became more sensitive to patient institutional investors when they stayed, but not when they left, during the 2008

Financial Crisis. Specifically, firms whose institutional investors chose to stay during the 2008 Financial Crisis became more long-term oriented in the years following.

Blending arguments of event attention and attentional control, I argue that the decision of an investor to stay created a co-dependent attentional structure during the Crisis, and this co-dependence increased a firm's subsequent sensitivity to its institutional investors. By empirically examining the effect of institutional investors on firms' long-termism after the Crisis, this study broadens our understanding of the role of third parties in controlling firms' attentional structures when they encounter critical events.

4.3 Literature Review and Hypothesis Development

4.3.1 Event Attention

Critical events often cause an epic change in an institutional environment (Fligstein, 1991; Hoffman, 1999). Unlike institutional changes that occur gradually and sequentially (Hoffman & Ocasio, 2001), critical events trigger field-level change. Critical events can also span a longer window of time. Nigam and Ocasio (2010) illustrate how a sequence of small processes during such a durational event re-orient public attention so that different institutional logics emerge and disappear. I similarly conceptualize the 2008 Financial Crisis as a durational event.

Critical events influence multiple levels in an organization, and the effects of events are often interrelated (Morgeson et al., 2015). I focus on the influence of critical events on firms' temporal structures. Kaplan and Orlikowski (2013) illustrate how external events in the market cause organizational actors to reinterpret the past, present, and future of a particular project. Cornelissen and his colleagues (2014) delineate the process by which organizational members coordinate their framing of the event to

collectively make sense of an unanticipated situation. Both studies underscore the role of communication in reorienting organizational members' attention as a critical event unfolds.

4.3.2 Attentional Control and Events

Organizational control has been defined as "measurement and control systems [that] focus attention and cause persons in the organization to orient their efforts to succeeding on the measured dimension" (Ocasio & Wohlgezogen, 2010, p.191; Pfeffer, 1982, p. 131). Different types of control mechanisms have different effects on attention, shaping either what stimuli organizational members pay attention to or how organizational members pay attention to those stimuli. Control mechanisms typically include organizational formal structures, such as hierarchy; however, Ocasio & Wohlgezogen (2010) argue that situational factors and communication with key stakeholders can also control organizational attention. They introduce the concept of attentional vigilance, defined as "the capacity of an individual to sustain concentration on a particular stimulus" (Ocasio & Wohlgezogen, 2010, p. 192).

Theories of attention have recognized the association between attentional vigilance and situational cues at different levels of analysis (DiMaggio, 1997; Rerup, 2009). These arguments have been proven for strong situational cues, such as boycotts (McDonnell & King, 2013), attacks (Kellogg, 2012; Shi & DesJardine, 2021), and hyper-activism (Bartley & Child, 2014; McDonnell et al., 2015; Weber et al., 2009).

Critical events demand hyper-vigilance. They also create interdependencies in attention among different actors through communication (Ocasio & Wohlgezogen, 2010). Hyper-vigilant actors co-regulate attention as they create new attentional structures in

response to novel cues. Rerup (2009) theorizes three aspects of attention co-regulation in what he describes as a triangulation process of attentional control in the case of weak cues; this process to co-regulate attention involves stability (sustained attention), vividness (appreciation of complex issues), and coherence (integration of issue characteristics). Similar processes of attention co-regulation have since been revealed for strong cues. For example, McDonnell and her colleagues (2015) suggest that in response to the targeted social activism, firms allow shareholder activists to access proxy proposals, and through the formal channels, firms then establish a structure that co-regulates attention with activists. This structure provides activists with opportunities to influence a firm's current and future decision-making.

In this essay, I primarily focus on a durational event, at the time characterized by a multitude of strong and weak cues (Campbell, 2018; Kirkpatrick, 2009). I argue that during the Crisis, institutional investors who decided to stay involved developed attentional co-dependencies with the firms whose fate they shared. Similarly, firms relied on their institutional investors' decisions to interpret the multitude of stimuli during the Crisis. I argue that firms' hyper-vigilance during the Crisis outlasts the durational event so that firms' subsequent attentional structures remain more sensitive to those institutional investors who decided to stay.

I focus on institutional investors who own a large number of shares (David et al., 2001; Shi et al., 2020). During the Financial Crisis, these large, patient owners were more likely to share the fate of the firm because they had few opportunities to divest. After the Crisis, however, they regained latitude (Rohde, 2011). At that point, some chose to stay with the firm while others chose to leave the firm and look for a better investment target.

For the hyper-vigilant firm, the loss of institutional investors not only undoes the earlier attentional interdependencies but also becomes a strong cue. I theorize and test how the decision to leave by an institutional investor who had shared a firm's fate during the Financial Crisis affects the firm's temporal horizon. Specifically, I hypothesize that the divestment of a large and loyal owner after the Financial Crisis motivates a firm to rethink its strategy in the direction of long-termism (Barton, 2011; Barton et al., 2017). I focus on long-termism because many institutional investors, such as pension funds, invest for the long term and maintain or terminate their positions depending on their confidence in a firm's ability to generate long-term results (Rohde, 2011).

4.3.3 Attentional Co-regulation During the Crisis

Increased control Attentional interdependencies emerge when actors jointly struggle to make sense of a multitude of strong and weak cues. These efforts neither require nor guarantee alignment of goals; they simply refer to modifications in firms' attention structures to take more explicitly and fully into account the interests of other stakeholders. During the Financial Crisis, firms became hyper-vigilant to the interests of their large owners who maintained their positions. I explore whether this hyper-vigilance made firms more sensitive to their institutional investors' decisions after the Financial Crisis. I argue that following the Crisis, attentional co-regulation continued to strengthen a firm's commitment to its owners' long-term investment horizons. Investment horizons became longer after the Crisis (Barton et al., 2017) as a variety of stakeholders demanded attention to societal and environmental metrics and revealed the downsides of short-termism. Several studies have shown that firms are more likely to shorten their time horizons (DesJardine & Bansal, 2019) under investor pressure and lengthen them if

investors actively promote longer time horizons (McDonnell et al., 2015). I argue that hyper-vigilant firms are more likely to lengthen their time horizons to match those of large owners with whom they had already established attentional interdependencies; this occurs for two reasons. First, such attentional interdependencies afford a variety of informational and coordination mechanisms that increase a firm's awareness and interpretation of temporal cues. Second, hyper-vigilant firms may match their large investors' time-horizons to mitigate divestment. Long-term investors may prefer a firm's competitors if they provide better matches. Given the social scrutiny of temporal horizons of institutional investors following the Crisis, many increased their emphasis on long-termism. I argue and test that attentionally co-dependent firms are more likely to lengthen their horizons, especially when their institutional shareholders continued to invest after the Crisis. Co-dependence increases a firm's motivation to keep up with their patient owners' long-termism.

> *Hypothesis 1 (H1): When a firm established an interdependent attentional structure with institutional investors during the Crisis, investment concentration after the Crisis is positively associated with the firm's long-term orientation.*

Decreased Control Institutional investors may alternatively choose to leave the firm after they had weathered the Crisis together. Their decisions to divest need not necessarily be firm-related. For example, investors may update their strategies or diversify their portfolios in response to other stakeholders. In any case, the decision to leave terminates the attentional interdependencies for the investor but adds a strong cue for the hyper-vigilant firm (Ocasio & Wohlgezogen, 2010). Because institutional investors became more long-term oriented after the Financial Crisis, I argue that the

decision to leave would have been interpreted as a gap in meeting such long-term orientation and the firm would have been motivated to close that gap in order to retain, and also attract, long-term focused investors. Although attentional controls are no longer in place, firms remain sensitive to their exiting investors' time horizons. If they interpret the strong cue of divestment as evidence of insufficient long-termism, firms are motivated to further lengthen their time horizons. Divested firms may also be motivated to prepare to co-regulate attention with new long-term investors.

Hypothesis 2 (H2): When a firm established an interdependent attentional structure with institutional investors during the Crisis, investment turnover after the Crisis is positively associated with the firm's long-term orientation.

4.4 Methods

4.4.1 Data and Sample

The sample was generated by merging different sources of data. First, I compiled CSR reports data from the Global Reporting Initiative (GRI) database. This database stores CSR reports that follow the GRI standards, updated by GRI and/or by GRI's data partners. GRI-compliant CSR reports contain information about a firm's various present activities and its future plans and goals. If CSR reports were missing from the GRI database, I obtained them from the firm's website. Second, I obtained institutional investment manager-level ownership information from 13-F filings using the U.S. Security and Exchange Commission (SEC)'s EDGAR database. In accordance with Section 13(f) of the Securities Exchange Act of 1934, institutional investment managers who exercise investment discretion over $100 million or more in Section 13(f) securities must report their holdings quarterly. The Form 13F report requires information about the

name of an institutional investment manager, the number of shares at the end of the calendar quarter, and the total market value of those shares. The database of 13-F filings provides quarterly information. I chose the first quarter as the baseline. This second source allowed me to trace the investment patterns of institutional investors. Third, I collected firm-level managerial information from ExecuComp data, financial information from Compustat, and social and environmental information from MSCI data produced after the Financial Crisis. The final sample of this study is comprised of 209 firm-year observations from 2010 to 2016. Table 9 shows the correlations among the included variables.

TABLE 9 Correlations

	Variable	Mean	Std. Dev.	1	2	3	4	5	6	7
1	Long-term Orientation	0.1170	0.0316							
2	Increased Control	0.3661	0.1239	0.0213						
3	Decreased Control	0.1015	0.0976	0.0347	0.2679*					
4	CEO Duality	0.6333	0.4824	-0.1207	0.0109	-0.1280*				
5	Managerial Control	0.4996	0.8507	-0.0589	-0.021	0.1337*	-0.0091			
6	Short-term Incentives	0.1443	0.0892	0.2098*	0.1562*	0.0512	0.1706*	-0.1658*		
7	Long-term Incentives	0.2309	0.2556	-0.0707	-0.0418	-0.1447*	0.1131*	0.0265	0.0799	
8	CEO age	56.8230	5.1121	-0.0899	0.0994*	-0.065	0.1564*	0.1196*	0.2498*	0.1171*
9	Firm Performance	0.0626	0.0871	-0.005	-0.0266	-0.1844*	0.1882*	-0.2318*	0.0787	0.0515
10	Firm Size	9.5346	1.4848	0.1704*	0.0813	-0.2175*	0.3612*	-0.3247*	0.5756*	0.3425*
11	Leverage	0.2476	0.1521	-0.0384	0.0904*	0.0439	-0.1311*	0.2077*	-0.0834	0.0291
12	Capital Intensity	0.0477	0.0351	0.1874*	-0.0605	-0.1020*	0.1355*	-0.1343*	0.2136*	0.2149*
13	R&D Intensity	0.0898	0.2394	-0.0927	-0.0577	0.1238*	-0.1768*	0.2027*	-0.07	0.0021
14	Sales Growth	0.0405	0.1645	-0.0767	-0.1512*	-0.0437	0.0225	0.0006	-0.0479	0.0078
15	KLD_Strength	5.6059	4.3857	0.1570*	-0.1312*	-0.3014*	0.2396*	-0.2969*	0.3517*	0.3349*
16	KLD_Weakness	3.5148	3.5079	0.2141*	-0.0287	-0.0171	0.1531*	-0.1914*	0.4639*	0.2675*

Notes. This table reports means, standard deviations, and Pearson correlation coefficients. The sample includes all firm-year observations for firms in the final sample from 2010 to 2016.

TABLE 9 Correlations (Continued)

	Variable	8	9	10	11	12	13	14	15
1	Long-term Orientation								
2	Intensified Investment								
3	Investment Turnover								
4	CEO Duality								
5	Managerial Control								
6	Short-term Incentives								
7	Long-term Incentives								
8	CEO age								
9	Firm Performance	0.0309							
10	Firm Size	0.2853*	0.1288*						
11	Leverage	0.0641	-0.3804*	0.0226					
12	Capital Intensity	-0.0061	-0.0098	0.2047*	-0.1137*				
13	R&D Intensity	-0.0476	-0.5310*	-0.2371*	0.2202*	0.0285			
14	Sales Growth	-0.0339	0.1780*	-0.09	-0.0312	-0.1130*	0.0253		
15	KLD_Strength	0.2120*	0.0083	0.6784*	-0.0244	0.1407*	-0.0068	0.0507	
16	KLD_Weakness	0.0345	-0.0688	0.5314*	-0.1746*	0.2654*	-0.0684	-0.0455	0.4977*

Notes. This table reports means, standard deviations, and Pearson correlation coefficients. The sample includes all firm-year observations for firms in the final sample from 2010 to 2016.

4.4.2 Interdependent Attentional Structure of Control

The Financial Crisis, deemed the worst economic disaster since the Great Depression, negatively impacted the U.S. economy between late 2007 and 2009. Approximately $8 trillion in value was lost in the stock market during this period (Merle, 2018).

I proxy *attentional interdependence* during the Financial Crisis as a composite of whether an institutional investor maintained its investment in a focal firm during the three years of the Crisis, 2007 to 2009, and whether the firm had sufficient continuity in management over the same time frame. I first calculate whether an investor maintains its position in a focal firm in 2008 when the Financial Crisis occurred; then I check whether the investor continues on in 2009. I create a binary variable, with a value of 0 if an investor terminates its position before the end of 2008 and 1 if it continues to hold shares of the focal firm from 2007 to the end of 2008, 2009, or both. I then compute the number of managers who stayed with a firm and averaged this number by the mean value of the number of firms from 2007 to 2009. I operationalize the attention structure as 1 if an investor maintained its position and the number of managers of the investor remaining with the firm is above the median. If the number of managers falls below the median, I consider the attentional interdependencies too diluted, even if the investor continued on throughout the Crisis. Because the interdependent attentional structure of control is time-invariant, I calculate the dummy variable to run a sub-sample analysis.

Dependent Variable. My outcome of interest is *a firm's long-term orientation*. To measure long-term orientation, I conduct dictionary-based text analysis using the Linguistic Inquiry and Word Count (LWIC) program. The LWIC program is developed

based on the psycholinguistic approach (Pennebaker et al., 2001), which presumes that a particular type of word used in texts properly reflects individual or collective psychological perceptions. The LIWC dictionaries have been validated and extensively applied across disciplines (Grimmer & Stewart, 2013; Ireland & Pennebaker, 2010; Nadkarni et al., 2019). The LIWC program contains a set of 48 words concerned with future temporality (e.g., "will", "shall", "going to") and a set of 169 words that indicate present temporality (e.g., "are", "is". "does"). The LIWC program counts the number of words in each category and provides the results. With the results, I compute the ratio of the number of future temporality words divided by the sum of the number of future temporality words and the number of present temporality words for each document to measure the long-term orientation towards the future. As a robustness check, I also employ the dictionary developed by DesJardine and Bansal (2019), which was created to measure organizational time horizons and summarizes terms signaling a short organizational time horizon and those signaling a long organizational time horizon. In robustness tests, long-term orientation is measured as the ratio of the number of long-time horizon words divided by the sum of the number of short-time horizon words and the number of long-time horizon words.

Independent Variables.

Increased control I measure *increased control* by operationalizing investor concentration, following previous studies, as the percentages of shares held by a firm's top five institutional investors (Demsetz & Lehn, 1985).

Decreased control Following Walls et al. (2012), I measure *decreased control* using the investment turnover. I calculate the investment turnover by institutional owners

as an inverse measure of their investment horizons. Investment horizon is calculated as the annual portfolio turnover of each investment institution, weighted by the shares the institution holds in a firm (Gaspar et al., 2005).

Control Variables. I included control variables that might influence organizational long-term orientation based on extant studies. I first take account of managerial information to control for the impact of management using ExecuComp data. *CEO duality* is a dummy variable and coded as 1 when the CEO is also the chairperson of the board and 0 otherwise. *Managerial control* is measured as the percentage of shares held by inside directors. Studies show that managerial control is positively associated with long-term actions, such as product quality management (Johnson & Greening, 1999) and corporate philanthropy (Coffey & Wang, 1998). CEO compensation is controlled in two ways. CEO short-term pay incentives are measured by CEO salary and CEO bonuses; CEO long-term pay incentives are measured by CEO stock options (Walls et al., 2012). Prior studies suggest that short-term pay incentives may hinder organizational long-term orientation (McGuire et al., 2003), whereas long-term pay incentives are positively associated with long-term strategy (Mahoney & Thorne, 2005). Moreover, I include CEO age because older managers and managers who have grandchildren are more interested in a sustainability agenda and risk-taking strategy (Tan et al., 2021).

In addition, I control for firm-level accounting information and CSR performance using Compustat data and MSCI data (King & Lenox, 2002; Walls et al., 2012). *Firm performance* is measured by return on assets (ROA), the ratio of operating income to the book value of total assets. *Firm size* is measured as a log of total assets. *Sales growth* is the change in sales over the previous year. *Leverage* is the ratio of total debt to the book

value of total assets. *Capital intensity* is the ratio of capital expenditure to total sales, and R&D intensity is the ratio of research and development expenditure to total sales. I winsorize at the 1st and 99th percentiles of the empirical distribution of these variables to lessen the effect of outliers. Year fixed effects and 2-digit industry fixed effects are included.

Model Choice. I use panel regression with fixed effects, which allows me to estimate the moderating effect of the attentional interdependence during the Crisis on the relationship between institutional investors' movement and a firm's long-term orientation after the Crisis, while controlling for time-invariant factors. To test the two hypotheses, I apply an ordinary least squares (OLS) regression model. I also cluster standard errors at the firm level to account for serial correlation in the error term within the cluster. I first ran the regression with the whole sample to estimate the effects of attentional interdependence. Then, I divided the sample into two groups, one with and the other without attentional interdependence.

4.5 Results

4.5.1 Main Results

Table 10 presents the results for Hypotheses 1 and 2. Model 1 shows that for the whole sample, both mechanisms – increased control (concentration) and decreased control (turnover) – following the Crisis, are insignificant predictors of firms' long-termism. For firms whose institutional investors stayed during the Crisis, Model 2 shows a positive association between concentration and firms' long-term orientations ($\beta=0.23$, $p < 0.05$). The effect is also practically significant: when a firm had developed attentional interdependencies with its institutional investors during the Crisis, 1% percent of shares

held by the firm's top five institutional investors relates to a 23% increase in the firm's long-term orientation. Model 3 shows an insignificant effect between the concentration of institutional investors and a firm's long-termism when investors decided to leave during the Crisis. The subsample analyses lend support to H1 by showing that institutional investors influenced a firm's long-termism after the Crisis only when they had shared the fate throughout the Financial Crisis.

TABLE 10 Main Results

	Whole Sample	Stay during the Crisis	Exit during the Crisis
	(1)	(2)	(3)
VARIABLES			
Increased (H1)	0.0310	0.2313*	0.0580
Control	[0.043]	[0.083]	[0.089]
Decreased (H2)	-0.0441	0.4661*	0.1994
Control	[0.080]	[0.211]	[0.208]
Increased Control x		-1.6506**	-0.4441
Decreased Control		[0.556]	[0.359]
CEO Duality	-0.0192*	-0.0259	-0.0262**
	[0.008]	[0.026]	[0.008]
Managerial Control	0.0063	0.0065	0.0061
	[0.008]	[0.020]	[0.006]
Short-term Incentives	0.0286	-0.0505	-0.0014
	[0.067]	[0.144]	[0.060]
Long-term Incentives	0.0062	0.0098	0.0169
	[0.012]	[0.012]	[0.020]
CEO age	-0.0014*	-0.0007	-0.0008
	[0.001]	[0.001]	[0.001]
Firm Performance	0.0275	0.1453	-0.0206
	[0.044]	[0.087]	[0.048]
Firm Size	-0.0022	-0.0127	0.0000
	[0.009]	[0.012]	[0.011]
Leverage	0.0091	-0.0033	0.0185
	[0.035]	[0.046]	[0.052]
Capital Intensity	-0.0552	-0.1793	0.5228
	[0.128]	[0.097]	[0.256]
R&D Intensity	0.0032	0.1184	-0.0487
	[0.026]	[0.139]	[0.034]
Sales Growth	0.0012	0.0269	-0.0202
	[0.014]	[0.021]	[0.033]
KLD_Strength	0.0015	0.0011	0.0016
	[0.001]	[0.001]	[0.001]
KLD_Weakness	0.0012	-0.0019	0.0023
	[0.002]	[0.002]	[0.002]
Year FE	included	included	included
Industry FE	included	included	included
Constant	0.1877*	0.2370	0.0822
	[0.093]	[0.134]	[0.102]
Observations	209	107	102
R-squared	0.163	0.273	0.385
Number of firmid	48	25	23

Standard errors in brackets, ** p<0.01, * p<0.05

Model 2 further shows that, as predicted by H2, turnover is positively associated with long-term orientation (β=0.47, $p < 0.05$). This effect is of practical significance in that a one-unit increase in the annual portfolio turnover of each investment institution is

associated with a 47% increase in a firm's long-term orientation. Turnover is not significant in Model 3. Together, these results lend support to H2.

The empirical results reveal two distinct mechanisms by which institutional investors' decisions to stay (concentration) and decisions to leave (turnover) increase firms' long-termism. Because the investors who decided to stay differ from those who decided to leave, Model 2 can be understood as substitutive. Firms that keep investors lengthen their horizons more in relation to the greater the concentration of investors with whom they had developed attentional interdependencies during the Crisis. Firms that lose investors lengthen their horizons more the greater their turnover of investors. Attentional interdependencies during the Crisis are related to higher levels of long-termism regardless of whether the investors stay or leave after.

4.5.2 Robustness Test Results

To confirm the robustness of the results, I ran the same regression with a different operationalization of the dependent variable. However, the results presented in Table 11 did not replicate the support for H1 or H2. Lagging the predictors by one year also failed to lend support to H1 or H2 (Table 12). This suggests that changes in temporal horizons are highly sensitive to how and when they are captured. Therefore, I caution against generalizations of the empirical findings beyond the specific definitions and operationalizations of the key constructs. Interpretations should also take into account that the relationships could be tested only on a quarter of the original dataset (209 of 896) due to data missing across the three key sources.

TABLE 11 Robustness Checks (DV: Long-term orientation based on OS measure)

	Whole Sample	Stay during the Crisis	Leave during the Crisis
	(1)	(2)	(3)
VARIABLES			
Increased	0.1919	-0.2184	0.3141
Control (H1)	[0.198]	[0.488]	[0.282]
Decreased (H2)	-0.5600	-1.6005	-0.2368
Control	[0.470]	[1.366]	[0.848]
Increased Control x Decreased		3.2591	-1.1912
Control		[3.500]	[1.407]
CEO Duality	0.0388	-0.0480	0.0353
	[0.022]	[0.076]	[0.033]
Managerial Control	0.0820**	0.0310	0.0805**
	[0.026]	[0.166]	[0.030]
Short-term Incentives	0.2472	0.1334	-0.1674
	[0.140]	[0.456]	[0.294]
Long-term Incentives	0.0103	-0.0103	0.0456
	[0.035]	[0.063]	[0.064]
CEO age	-0.0014	-0.0015	-0.0014
	[0.002]	[0.004]	[0.003]
Firm Performance	-0.1311	-0.0981	0.1651
	[0.130]	[0.383]	[0.170]
Firm Size	-0.0215	0.1012	0.0239
	[0.013]	[0.072]	[0.039]
Leverage	-0.1760*	-0.2694	-0.1385
	[0.077]	[0.284]	[0.157]
Capital Intensity	-0.0755	0.6656	-0.1869
	[0.344]	[0.757]	[0.684]
R&D Intensity	-0.0635	-0.0192	-0.1594
	[0.053]	[0.945]	[0.098]
Sales Growth	0.0472	0.0274	-0.1312
	[0.047]	[0.087]	[0.069]
KLD_Strength	0.0015	-0.0009	-0.0000
	[0.003]	[0.005]	[0.005]
KLD_Weakness	0.0078	-0.0035	0.0020
	[0.005]	[0.010]	[0.007]
Year FE	included	included	included
Industry FE	included	included	included
Constant	0.7587**	-0.2761	0.3594
	[0.154]	[0.728]	[0.415]
Observations	209	107	102
R-squared		0.154	0.418
Number of firmid	48	25	23

Standard errors in brackets, ** p<0.01, * p<0.05

Table 12 Robustness Checks (Models with lagged independent variables)

	Whole Sample	Stay during the Crisis	Leave during the Crisis
	(1)	(2)	(3)
VARIABLES			
Lagged Increased Control (H1)	-0.0066	-0.0032	-0.0702
	[0.031]	[0.108]	[0.109]
Lagged Decreased Control (H2)	0.0171	0.2156	-0.2539
	[0.115]	[0.348]	[0.280]
Lagged Increased Control x Lagged Decreased Control		-0.2695	0.2580
		[0.490]	[0.480]
Lagged CEO Duality	-0.0148*	0.0445*	-0.0114
	[0.006]	[0.018]	[0.010]
Lagged Managerial Control	0.0067	0.0265	0.0195
	[0.007]	[0.024]	[0.010]
Lagged Short-term Incentives	-0.0150	-0.0837	0.0664
	[0.039]	[0.109]	[0.103]
Lagged Long-term Incentives	-0.0173	-0.0477*	0.0537*
	[0.011]	[0.018]	[0.023]
Lagged CEO age	-0.0006	-0.0002	-0.0023*
	[0.000]	[0.001]	[0.001]
Lagged Firm Performance	0.0249	-0.1111	0.0759
	[0.043]	[0.111]	[0.060]
Lagged Firm Size	0.0172**	-0.0170	-0.0117
	[0.004]	[0.019]	[0.014]
Lagged Leverage	0.0167	0.1330	-0.0168
	[0.022]	[0.077]	[0.057]
Lagged Capital Intensity	0.0645	-0.0793	0.0166
	[0.125]	[0.260]	[0.246]
Lagged R&D Intensity	0.0526**	-0.2018	0.0965**
	[0.018]	[0.300]	[0.031]
Lagged Sales Growth	0.0022	0.0071	0.0442
	[0.014]	[0.024]	[0.023]
Lagged KLD_Strength	0.0001	-0.0012	-0.0006
	[0.001]	[0.001]	[0.001]
Lagged KLD_Weakness	-0.0023	-0.0022	0.0008
	[0.001]	[0.003]	[0.002]
Year FE	included	included	included
Industry FE	included	included	included
Constant	-0.0011	0.3069	0.3525*
	[0.056]	[0.191]	[0.153]
Observations	191	98	93
R-squared		0.357	0.529
Number of firmid	46	22	24

Standard errors in brackets, ** p<0.01, * p<0.05

4.6 Discussion and Conclusion

Building on the attention-based view, I argue that firms developed attentional interdependencies with their institutional investors during the Crisis, which continued to control firms' orientation after the Crisis. The mechanisms are different whether the investors had chosen to stay (via concentration) or leave (via turnover), sensitive to the operationalization of firm long-termism and lags. However, they provide tentative support for the premise that under specific conditions third parties can influence a firm's decisions. For long-termism, this study shows that firms remain sensitive to the decisions of institutional investors who had shared their fate during the Crisis.

4.6.1 Contributions

This study makes several contributions. First, it contributes to the literature on the attention-based view (Ocasio, 2017). Previous literature on the attention-based view has underscored the variety of processes of organizational attention during and after events (Hoffman & Ocasio, 2001), firms' strategic decision making and adaptation (Ocasio, 2011), and the role of communication in shaping organizational attention (Ocasio et al., 2018). Although attentional control by third parties is implicit in many of the recent studies of investor activism, none examine the premise of attentional control theorized by Ocasio and Wohlgezogen (2010). I elaborate on the lasting effects of attentional interdependencies between a firm and its institutional investors during the Financial Crisis to theorize why firms remain sensitive to their investors' later decisions to stay or to leave.

Second, this study distinguishes processes of attentional control during and after the Crisis. While extant studies have looked at how organizational attention is controlled

while events are unfolding (Rerup, 2009; Nigam & Ocasio, 2010; Weick et al., 2005), this study argues and shows that attentional controls can continue, through different mechanisms, long after the event has ended, and even after the relationship with a third party had been terminated.

Third, this study emphasizes one form of attentional control between a firm and institutional investors that has been underexplored. Extant studies have examined various forms of attentional alignments between a firm and stakeholders (Odziemkowska, 2019; McDonnell, 2016) and yet most discussion of attentional control focuses on a bidirectional relationship between a firm and activist stakeholders, in attending to contentious issues (Odziemkowska & McDonnell, 2019). My findings show that when issues are not contentious, firms have a choice with whom they coordinate organizational attention structure and align their attention. Firms could develop attentional interdependence and collaboration with a particular stakeholder group, which enhances their attention structure.

Fourth, this essay adds to the established literature on corporate governance and sustainability strategy (Aguilera et al., 2021; Walls et al., 2012). Corporate governance, defined as a distribution of rights and responsibilities within a firm (Aguilera & Jackson, 2003), plays a pivotal role in shaping a firm's long-term orientation and related actions, such as R&D investment, environmental disclosure, and performance (Walls et al., 2012). Many theories, including agency theory (Fama & Jensen, 1983), resource dependence theory (Salancik & Pfeffer, 1978), upper echelons theory (Hambrick, 2007), and institutional theory (DiMaggio & Powell, 1983), have been previously used to explain how corporate governance influences firms' long-term strategies. The arguments

included in this study add to these prior mechanisms by explaining how concentration and turnover among investors who shared the fate of the firm during the Crisis continue to *control* its long-termism after.

Finally, this study sheds light on the role of institutional investors in how organizations navigate crises (Chiu, 2011). Extant literature has examined how activist shareholders determine a firm's performance and survival via boycotts, social movements, or hyper-activism (McDonnell & King, 2013; Shi & DesJardine, 2021; Weber et al., 2009). I add that institutional investors who have a large number of shares and have more patience have been overlooked and reveal new mechanisms through which they continue to influence the firm after a crisis, whether they stay or leave.

4.6.2 Limitations and Future Research

This study has several limitations that future research could begin to address. First, missing data across the sources reduced the final sample to several hundred firms. Some of the predicted effects may be not significant given the size of the sample.

My operationalization of attentional interdependence fits the theoretical arguments available but awaits further validation. Future work could elaborate on how such attentional interdependencies emerge and how the resulting hyper-vigilance manifests during and after the Crisis using qualitative methods.

In the previous literature, scholars have called for the importance of a more comprehensive understanding of the role of corporate governance in firms' long-term orientations (Aguilera et al., 2021; Walls et al., 2012). Future research could broaden the range of corporate governance factors (i.e., ownership x board diversity) to include a

variety of cues as they emerge as well as differentiate more precisely how different influences take place over time.

4.6.3 Managerial Implications

The findings of this paper offer managerial implications. First, when attentional interdependencies are developed, investors' decisions to stay or leave are associated with longer-term orientations. Managers should consider not only the presence of such attentional interdependencies but also their ability to control the firm's attention after the third parties leave; as important as investors' investment and divestment are, the stability and change in their position during periods of adversity, such as the Financial Crisis, may have lasting impact on a firm's decisions, such as long-termism.

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CHAPTER 5: CONCLUSION

The three essays included in my dissertation combine language- and attention-based views to explain how public firms shifted from short-termism towards long-termism in the aftermath of the Financial Crisis. Organizational attention is not merely an outcome of organizational members' collective cognition (Ocasio, 2001) but also co- and re-produced through communication (Ocasio, 2017) in response to weak and strong cues (Rerup, 2009). Ocasio and his colleagues (2018) strongly emphasize that communication is more than a conduit through which information is exchanged. By guiding how actors interact with one another to question norms, make sense of new stimuli, and imagine a future different from the past (Kaplan & Orlikowski, 2013), language can also radically reorient attention. Several studies have shown how language plays a central role in navigating environmental jolts, such as a short, field-wide event (Nigam & Ocasio, 2010) or event series (Joseph & Ocasio, 2012; Ocasio & Joseph, 2008).

I develop a language-based theory of long-termism by specifying linguistic mechanisms that accelerate firms' transitions from short-termism to nuanced and balanced representations of time in their CSR reports. In Essay 1 I retrace firms' transitions from short- to long-termism in the aftermath of the Financial Crisis. In Essay 2 I introduce the concept of bifocality and induce four configural recipes by which previously myopic firms combine responsibilities (financial and social) with spatio-temporal metaphors (proximal and distal) to create a future that balances the short and the long term. In Essay 3 I explain how third parties (non-activist institutional investors) attain and retain attentional control, so their longer horizons continue to accelerate firms' long-termism whether they stay or leave the firm.

Taken together, these three essays provide complementary explanations for the emergence of long-termism in the decade following the 2008 Financial Crisis. They also encourage optimism in firms' abilities to lengthen their time horizons to match the temporal characteristics of social and environmental issues (Bansal et al., 208) and catch-up with longer-term oriented stakeholders, such as non-activist institutional investors.

5.1 Contributions to Theory

The overarching contribution of my dissertation is specifying how linguistic choices orient a firm's attention to longer-term futures. The proliferations of temporal constructs (Tang et al., 2019), the variety of firms' temporal schemas (Shipp & Richardson, 2021), and the multiple ways in which firms experience time subjectively and create new temporal structures (Shipp & Jansen, 2021) demonstrate that time is not fixed but rather evolves dynamically in organizations. The literature on time and sustainability has underscored the malleable relationship between past, present, and future, offering versatile ways in which firms balance different time horizons, such as cyclicality (Slawinski & Bansal, 2012), ambitemporality (Reinecke & Ansari, 2015), the long present (Kim, Bansal & Haugh, 2019), and the responsiveness of firms' time horizons to pressure from investors (DesJardine & Bansal, 2019). I contribute the concept of bifocality which shows that, and how, firms use language to balance attention to the short and long future.

My dissertation clarifies the sequential relationship proposed by Ocasio and colleagues (2018), whereby language precedes and prefigures attention, in three ways. First, Essay 1 reveals how language emerged during and evolved after the Financial Crisis. Studies of how organizational attention is developed and altered through a crisis

(Hoffman & Ocasio, 2001) suggest that language is a primary medium that actors adopt to make sense of an organization's policy, which guides individual and/or collective attention to important issues. Essay 1 captures the emergence of spatio-temporal metaphors and describes textually and visually how these metaphors qualify firms' responsibilities (financial and social). By combining topic modeling with illustrations, this first essay adds granular linguistic patterns to the discursive narrative and frames recent studies relied on. These granular linguistic patterns reveal the power of words in guiding attention towards either proximal or distal time and the effect of word assemblages in conveying how firms repeatedly reallocate attention among different horizons.

Essay 2 induces four configurations of spatio-temporal metaphors and responsibilities that help firms create a bifocal future post-Crisis. The duality of attention to short and long futures can be achieved through distinct linguistic recipes.

Essay 3 argues that third parties can control a firm's attention to the long term. I focus on non-activist institutional investors to complement the emphasis placed by recent studies on different types and mechanisms activist investors, and activists more broadly, deploy to broaden a firm's attention to sustainability issues. Non-activist investors are often patient; they maintain their positions over time. However, during the Financial Crisis, their decisions to share firms' fates created attentional interdependencies. Investors who chose to maintain their positions, controlled firms' attentions post-Crisis, whether they stayed or left. This third essay not only confirms the robust longitudinal relationship between language and attention to the long term but also shows how

temporary choices (during the Crisis) can continue to exert lasting effects (after the Crisis).

Although the co-evolution of language and attention had already been documented in many studies, the sequential relationship whereby language orients attention has not yet been explicitly stated. The different ways in which language precedes and prefigures attention, discovered in the three essays, suggest that linguistic mechanisms emerge early and have robust effects over time.

Furthermore, my dissertation elucidates how firms decouple through language (Crilly, Zollo & Hansen, 2012). In essays 1 and 2, my findings show that firms pursue their own actions and courses through language. Firms use chronotopes to manage multiple temporalities and linguistically configure their futures. Their linguistic representation and configuration of short and long futures attend directly and simultaneously to social demands where firms strengthen their own forces. By contrast, the essay 3 indicates that firms may be referencing particular stakeholders for their actions. Through the interdependent attentional structure, firms adjust their courses while contingent on one stakeholder group, institutional investors. Faced with less contentious issues, a firm has an option to go closer to its stakeholders and configure adjustments together. Once formed interdependencies could make the focal firm and the stakeholders' attention more tightly aligned and they continue to pay attention to the same issues together.

5.2 Contributions to Method

My dissertation also offers methodological contributions. Scholars have largely relied on qualitative methods to unpack the creation of temporal structures to reach new

truces or equilibria (Kaplan & Orlikowski, 2013), their juxtaposition (Slawinski & Bansal, 2015), and negotiation (Reinecke & Ansari, 2015). Their insights revealed new processes by which firms work with time. However, more granular changes in language over longer periods of time are challenging to uncover inductively. Several scholars have experimented with micro methodologies including textual analysis (DesJardine & Bansal, 2019), grammar structure analysis (Crilly et al., 2016), video-based methods for hand-gesture analysis (LeBaron et al., 2018), and natural language processing techniques (Choi et al., 2021) to gain finer-grained insights into how language works. In my dissertation, I apply a widely used natural language processing technique called topic modeling. In Essay 1, I use topic modeling to extract words firms used repeatedly to describe time across their portfolio of sustainability initiatives. After extracting these sets of words, I applied them to the reports and identified how they change over time in firms' textual and visual reports. In Essay 2, I derive changes in the topics extracted in Essay 1 and use fsQCA to identity which configurations are necessary and sufficient for bifocality. In Essay 3 I rely on LIWC to operationalize long-termism. These diverse methods to operationalize language not only complement discursive or narrative approaches but also reveal patterns that would be difficult to detect inductively and/or organize conceptually and processually. My dissertation also answers the call by Lowenstein et al. (2012) for a focus on vocabularies of motive by consistently operationalizing the dependent variable/s as vocabulary-based measures (Essay 2 and Essay 3).

5.3 Future Research Agenda

My dissertation shows how language helps alter attention structures (Ocasio et al., 2018) during crises. Specifically, I argue and find that firms' transitions to long-termism

can be explained through the words firms use repeatedly (Essay 1), through the combinations of changes in words firms master over time (Essay 2), and through the influence of third parties (Essay 3). Prior studies had discovered other sources and mechanisms of attention during a crisis, including temporal narratives (Bartel & Garud, 2009), temporal work (Kaplan & Orlikowski, 2013), cultural codes (Weber et al., 2008), situation-level interactions for sustainability issues (Soderstrom & Weber, 2020), language-based imagination to elaborate on the distant future in geoengineering (Augustine et al., 2019), and shared programs and practices to comply with meta standards across national or industrial boundaries (Raufflet et al., 2014). Looking retrospectively across these studies, we recognize that language bridges the old with the new normal by reorienting attention to critical levels and levers in the system. Not only is language critical to sensemaking during crises, but it is also constitutive in that it creates and affords different transition pathways to the new normal. The linguistic bases of attention thus loom particularly relevant to post-pandemic organizing. I suggest micro-linguistics may be particularly revelatory because trends and patterns in the use of language may be hard to detect in the stories we tell. Rather, they may emerge at more granular or microscopic levels of analysis.

My dissertation also speaks to the different timespans at which language works. Essay 1 reconstructs the trajectory of linguistic change after the Crisis from the annual reports firms produced. Essay 2 examines changes in word use for the decade following the crisis. Essay 3 predicts longitudinal relationships between language and attention post-Crisis. The ability to capture language at the granular level of topics enables all three derivations. Combining annual trends with measures of overall change and longitudinal

relationships allows a more complete appreciation of the various ways in which language can shape attention. Future research may extend this approach to other types of attention and other outcomes to which organizations are just beginning to pay attention.

Last, my dissertation offers new insights on how firms can achieve temporal equilibrium by resetting language. In addition to the mechanisms by which firms adjust objective and subjective time already discussed in the literature, I suggest that language itself offers a fruitful arena for appreciating the multiple meanings and mechanisms of temporal equilibrium. Essay 1 explains temporal equilibrium as a dual qualification of firms' responsibilities with proximal and distal spatio-temporal metaphors. Although recent studies show how the distant future becomes proximal through conversations that concretize different dimensions (Augustine et al., 2019), this essay suggests that the co-existence of spatio-temporal metaphors may be a more general phenomenon. Future research may explore which spatio-temporal metaphors emerge for other attention structures or outcomes of interest and inquire into their co-existence. Essay 2 draws attention to patterns of change in language over time. Although firms use the same words repeatedly, this essay points to the repetition itself as a key level of analysis. Through repetition, language construes familiarity and creates temporal structures that enable persistent attention to specific issues over different windows of time. Future research can repurpose the concept of settlements to distinguish provisional from permanent uses of language. For example, the introduction of new topics, such as the spatio-temporal metaphors (Essay 1), serve provisional functions, whereas combinations of topics (Essay 2) serve permanent functions.

5.4 Contributions to Practice

Essay 1 and Essay 2 show that transitioning to the long term is not a departure from the short term but rather a balance between both. Bifocal firms attend to their near and far futures at once. Firms can achieve bifocality in four distinct ways. Only one of these combinations is purely temporal (it does not involve either financial or social responsibilities) and is robust across different types of firms (financial and non-financial). Juxtaposing proximal and distal spatio-temporal metaphors is sufficient for bifocality. This path suggests that firms can transition to long-termism by creating a dual structure, irrespective of their responsibilities or changes thereof. In the other three combinations, firms use one or both metaphors to qualify responsibilities. The distinction between the purely temporal pathway and the other three suggests that language construes times either as the principal mechanism or as an adjacency. While responsibilities remain important, one of the most immediate practical implications of Essay 2 is that firms can achieve bifocality by bringing spatio-temporal metaphors to the fore. The critical importance of spatio-temporal scales has already been established (Bansal et al., 2018). Essay 2 adds two key insights. First, spatio-temporal metaphors reflect the functionality of language in adjusting spatio-temporal scales. Second, the duality of space-time representations in language is sufficient to maintain bifocality, even over long windows of time. Taken together, these first two essays reinforce the centrality of spatio-temporal language in helping firms span the multiple temporalities associated with social and environmental issues.

Essay 3 explains how language created attentional interdependencies during and after the Crisis among the firm and key stakeholders. The empirical findings apply to one

type of third party that has been neglected in the literature on sustainability: non-activist institutional investors. The results show that their decisions to stay or leave accelerate firms' transitions to long-termism. These findings have two pragmatic implications. First, they help firms appreciate that sharing the fate during critical periods aligns firms' attention structures with those of third parties. Second, and most important, once attentional structures align, these third parties can continue to control the attention of the firm. In this study, firms continued to match the horizons of their more long-term oriented investors after the Financial Crisis. Similar types of entrainments have been discussed at different levels. However, the entrainment between the firm and key third parties allows firms to adopt novel sets of practices and even reach a new normal.

The three essays also afford new insights into post-pandemic organizing. They suggest that words can help firms attend simultaneously to proximal and distal space-time scales, that this juxtaposition is sufficient to maintain bifocality, and that sharing the fate with specific stakeholders adjusts firms' bifocal structures to more closely match those of their third parties.

5.5 Limitations

My dissertation has three main limitations. First, I rely primarily on CSR reports. All dependent variables are operationalized using publicly available texts. Although these CSR reports are widely used, subject to shared standards, and include audited statements, they may not fully or even representatively reflect all the sustainability activities undertaken by each firm. Replicating the analyses on different types of conversations, such as earnings conference call transcripts (DesJardine & Bansal, 2019), would ensure

that the findings are not unduly influenced by the nature of the CSR reports or the form of delivery (in writing, to public audiences).

Second, the patterns of attention described in Essay 1 and combined in Essay 2 rely on topic modeling results. The extractions are remarkably robust to the sample and the number of topics. They are also evident, ex-post, in key cases used to illustrate the intuitive application of the topics. The extracted topics resonate with several recent studies that follow distinct methodologies. However, they have not been validated through interviews with report writers or various audiences; therefore, I cannot specify the extent to which these words are repeated intentionally or merely reflect linguistic inertia from one report to the next.

Third, due to missing data across samples, Essay 3 suffers from sample restrictions. Although the power is sufficient to detect significant effects, it is possible that the variance in several variables is limited, and therefore, some of the effects remain statistically not significant. Larger and especially more heterogeneous samples would enhance my confidence in the pattern of reported findings. Future research can also elucidate the deductive arguments regarding the development of attentional interdependencies during the Crisis and the continuance of attention control after the Crisis. The current arguments rely on theoretical logic and await evidence based on the lived experiences of managers attuning to third parties' plans and goals.

5.6 References

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CURRICULUM VITAE: NAHYUN KIM

EDUCATION

Ph.D. Candidate in General Management
Ivey Business School, Western University (Expected) 2021
Concentration: Strategy and Sustainability

M.Sc. in Business Administration
Korea University Business School, Korea University 2014
Concentration: Strategy and International Business
Thesis: "Environmental pressure and the performance of foreign firms in an emerging economy"

B.A. in Chinese Language and Literature; B.B.A in Business Administration
Korea University 2011
Major: Chinese Language and Literature, Business Administration

RESEARCH INTERESTS

Corporate Sustainability and Social Responsibility, Nonmarket Strategy, Cognitive Linguistics, Vocabularies and Vocabulary structure, Big Data Analysis

PUBLICATIONS

Nahyun Kim, Junxiu Sun, Haitao Yin, & Jon J. Moon. (Forthcoming). "Do foreign firms help make local firms greener? Evidence of environmental spillovers in China" ***Journal of International Business Studies***

Tima Bansal, Jury Gualandris, & Nahyun Kim. 2020. "Theorizing supply chains with qualitative Big Data and topic modeling" ***Journal of Supply Chain Management,*** 56(2): 7-18.

Nahyun Kim, Jon J. Moon, & Haitao Yin. 2016. "Environmental pressure and the performance of foreign firms in an emerging economy" ***Journal of Business Ethics***, 137(3): 475-490.

WORKING PAPERS

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Marlon Alves, Larissa Pacheco, Nahyun Kim, Oana Branzei & Adriana Caldana
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Nahyun Kim, Oana Branzei & Shane Wang (Essay 2) ***Organization Science***
Nahyun Kim (Essay 3) ***Strategic Management Journal***